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ABSTRACT

This study investigates the bases for constructing quantitative and qualitative measures of Australian Colleges of Advanced Education (CAE) library collection adequacy, and the feasibility of producing specialized and appropriate measures to guide future collection planning. Adequacy is based on the libraries' policies for providing materials to students and faculty. The report presents in detail procedures and results of six studies conducted as part of the research design: (1) survey of statistics relating to size of holdings, additions to, and loans from CAE collections; (2) study of present adequacy of library collections in five CAE libraries assessed by performance on a documents delivery test; (3) study of requirements for monographs based on subject assessment by teachers and librarians; (4) study of serials titles required for adequate support of courses and research; (5) study of alternative sources of course reading materials used by students; and (6) subject examination of methods suggested in published literature for improving quality and availability of collections. The study makes 38 recommendations for improving comparative statistical reporting, quantitative provision for collections, improving budgeting for collections, increasing availability and use of library materials, improving quality of collections, and further study. An extensive literature review, bibliography, and appendices are published in volume 2 (IR 004 762). (KP)

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MEASURES OF ADEQUACY FOR LIBRARY COLLECTIONS IN AUSTRALIAN COLLEGES OF ADVANCED EDUCATION

REPORT OF A RESEARCH PROJECT
CONDUCTED ON BEHALF OF THE COMMISSION
ON ADVANCED EDUCATION

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VOLUME 1

MAIN REPORT

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PREFACE

This report is the result of a research project entitled: "An investigation into the feasibility of constructing qualitative and quantitative measures of adequacy of College of Advanced Education library collections, as a guide to the future planning of such collections throughout Australia".

The greater part of the work on the project was carried out by Eric J. Wainwright at the Department of Library Studies, Western Australian Institute of Technology, under the direction of John E. Dean, Head of the Department, and with the assistance of a research assistant, Elizabeth Shepherd, formerly of the Footscray Institute of Technology Library.

Objectives

The objectives of the project, as outlined in the original submission to the Research Committee of the Commission in 1974, were:-

(a) To investigate the bases upon which quantitative and qualitative measures of adequacy of C.A.E. Library collections may be constructed.

(b) To enquire into the feasibility of producing specifically designed measures for these collections.

(c) In the light of the findings in sections (a) and (b), to attempt to establish appropriate measures as a guide to the future planning of such collections throughout Australia.

The objectives were formulated for two major reasons:-

(a) No planning formulae existed for the long-term development of library collections in Colleges of Advanced Education. The standards promulgated in the Second and Third Reports of the Australian Commission on Advanced Education and its predecessor, the Commonwealth Advisory Committee on Advanced Education, were promulgated basically as short-term goals to be achieved by C.A.E. Libraries in a period when C.A.E.'s were either in the middle of changing their role from that of technical colleges, or else in their initial growth periods as new institutions. The targets outlined in the reports were necessarily bound by the financial resources available in particular triennia, and could not be regarded as long-term guidelines. Although other standards and guidelines had been suggested by such bodies as the Victoria Institute of Colleges and the Library Assocation of Australia, any quantitative recommendations therein appeared to be either wholly intuitive or closely based on recommendations made for colleges and universities overseas, particularly the United States. Although such recommendations may well have been appropriate for the institutions for which they were designed, they would be unlikely to be appropriate for Australian Colleges of Advanced Education, with their diverse mix of sizes, subject ranges, and geographical locations in relation to alternative library resources. It was seen as a necessity that measures be developed which were both valid and practicable in the Australian context.

(b) It was considered that Colleges of Advanced Education libraries were about to enter a new stage of development. By the end of 1975, most would have passed through their transitional or initial growth periods. The substantial increases in rates of growth experienced in the three triennia 1967-1975 clearly could not be sustained in the longer term, since much of this increase was caused by the need to make up a collection backlog resulting from years of neglect in older colleges, plus the need to cater for the rapidly increasing number of new courses and students. Although new course development could be expected to continue in C.A.E.'s and the library financial implications met, the provision of special unmatched grants for library collection building was unlikely to continue. What was needed, then, were planning criteria to deal with the more continuous and steady development of well established colleges.

Pattern of Research

A project Working Party was initially established in January 1974, consisting of the project investigators, plus two senior members of the Library staff of the Western Australian Institute of Technology, who assisted considerably in their provision of advice on formulation of objectives and methodology.

The initial period of funding for the project was from the 1st March, 1974 to 29th February, 1975. However, it was clear by mid-1974 that, as had been foreshadowed in the original project submission, the objectives of the project could not be achieved within such a time period, and a further submission to the Commission on Advanced Education resulted in an extension of finance for the project for a further nine months to the 1st December, 1975. Initially, it was intended that all survey investigations and field work should be carried out by the project investigators. However, the move of Mr. Wainwright from the W.A.I.T. Department of Library Studies to a position with Murdoch University in July 1975 necessitated the employment of a temporary Research Assistant, Mrs. Elizabeth Shepherd, for a period of three months from May to August 1975, to undertake survey work planned in colleges in Victoria. Mr. Wainwright's move also delayed the final analysis of survey data and production of this report for a considerable time, owing to his inability to continue full-time work on the project, a fact for which apologies are due to the Commission.

Apart from the advice received from members of both the Department of Library Studies and the Robertson Library at the Western Australian Institute of Technology, the project design was heavily influenced by methodologies developed by researchers overseas, and by conversations with the librarians of, and visits to, the following tertiary institutions throughout Australia:-

Australian Capital Territory:-

Australian National University
Canberra College of Advanced Education

New South Wales:-

Hawkesbury Agricultural College
Kuring-Gai College of Advanced Education
Mitchell College of Advanced Education
New South Wales Institute of Technology
Riverina College of Advanced Education
Sydney Teachers College
University of New South Wales
University of Newcastle
University of Sydney
University of Wollongong

Victoria:-

Ballarat College of Advanced Education
Bendigo College of Advanced Education
Caulfield Institute of Technology
College of Nursing, Australia
Footscray Institute of Technology
Gippsland Institute of Advanced Education
Gordon Institute of Technology
La Trobe University
Lincoln Institute
Prahran College of Advanced Education
Royal Melbourne Institute of Technology
Swinburne College of Technology

Queensland:-

Darling Downs Institute of Advanced Education
Griffith University
Kelvin Grove College of Teacher Education
Mount Gravatt College of Advanced Education

South Australia:-

Adelaide College of Advanced Education
Flinders University
Murray Park College of Advanced Education
South Australian Institute of Technology
Sturt College of Advanced Education
Torrens College of Advanced Education
University of Adelaide

Western Australia:-

Churchlands Teachers College
Murdoch University
University of Western Australia
Western Australian Institute of Technology
Western Australian Secondary Teachers College

A large contribution to the project was made by librarians in these institutions, but full responsiblity for the opinions, analyses and recommendations expressed in this report remains that of the project investigators.

PLAN OF REPORT

This report has been planned so that it may cater for the differing needs of those who may wish to refer to it for different purposes.

The report has been divided into two volumes:-

Volume 1 contains only the main description of the work carried out in the research project and the conclusions and recommendations arising from the results of that work. It is aimed at the primary requirements of those who will evaluate this report on behalf of the Commission on Advanced Education, and has been arranged to meet those requirements, beginning with the chapters describing the major part of the work through to chapters relying more on results available from previously published investigations.

For those who wish only to ascertain the main concerns of the report, and the main thrusts of the recommendations, a Summary of Recommendations immediately follows this report plan on pages xxiii to xxxvi. This summary refers also to the full wording of each recommendation listed in the main report.

For those who wish to evaluate the work lying behind the development of each recommendation, the full recommendations arising from the work described in each chapter are listed at the end of the chapter involved.

Volume 2 contains an extensive review and analysis of the published literature relevant to the project, a full bibliography, and several appendices referred to in, but supplementary to, the main report.

For those who wish to fully understand the difficulties inherent in making justified recommendations relating to the quality and quantity of C.A.E. library collections, we recommend the reading of the literature analysis in Volume 2, before consideration of the main report. The literature analysis also describes some of the techniques involved in and the reasoning behind the research approaches adopted.

For those who wish to build on particular aspects of our work, as described in the chapters of the main report (and we regard our available data to be incomplete in many areas), the bibliography is designed to be sufficiently comprehensive for future investigators to have a full range of relevant literature easily accessible, in continuing work on specific areas of the work we have encompassed.

SUMMARY OF RECOMMENDATIONS

This summary does not include all the detailed guidelines specified for application of many of the recommendations. It is essential that anyone seeking to apply any particular recommendation refer to the full text of the recommendation at the appropriate pages in the main body of the report.

The recommendations are grouped according to the broad purposes that they are designed to achieve.

A. Recommendations for Improving Comparative Statistical Reporting

RECOMMENDATION 1 (Page 59)

That the statistics listed on pages 59 to 65 be collected and reported by the Chief Librarians of all Colleges of Advanced Education, to the Commission on Advanced Education, and for selective publication in the journal *'Australian Academic and Research Libraries'*, and that the collected statistics be distributed to all C.A.E. Chief Librarians.

RECOMMENDATION 2 (Page 65)

That in reporting the statistics listed in Recommendation 1, the definitions and guidelines listed on pages 65 to 72 be adopted by Chief Librarians of all Colleges of Advanced Education, in order to eliminate the misinterpretations in current statistical reporting.

B. Recommendations for Quantitative Provision for Collections

RECOMMENDATION 3 (Page 101)

That in making estimates for the necessary basic retrospective provision of monograph collections in C.A.E. libraries, the following formula be applied, to arrive at the total number of monograph volumes required:-

1.	Basic General Collection.	5,000 volumes
	Plus for each E.F.T. tertiary student.	3 volumes
2.	For each major undergraduate course area in which the highest qualification level is an Associate Diploma (two-year course, UG3).	1,500 volumes
3.	For each major course area in which the highest qualification level is a Diploma (three-year course, UG2), Bachelor's degree (UG1), or 'Graduate Diploma'. . . .	2,750 volumes
4.	For each post-graduate course area in which the highest qualification level is a 'Post-graduate Diploma'	2,750 volumes
5.	For each post-graduate course area in which the highest qualification level is a Master's degree (PG2).	5,500 volumes
6.	Basic Teaching Staff Collection . .	4,000 volumes
	Plus for each F.T.E. member of teaching staff	60 volumes
7.	For each E.F.T. tertiary student. .	16 volumes

RECOMMENDATION 4 (Page 103)

That each C.A.E. library compare the total number of volumes in its monograph collection, as at 31st December 1976, with the total number of volumes arrived at as a result of the application of the formula in Recommendation 3, and then rate its collection as falling into one of the following categories:-

Category A - Collection size 100% or more of formula recommendation

Category B - Collection size 80-99% of formula recommendation

Category C - Collection size 60-79% of formula recommendation

Category D - Collection size 40-59% of formula recommendation

Category E - Collection size below 40% of formula recommendation

Libraries in each category should then receive sufficient funds, either from their college's recurrent budgets or by special earmarked grants from the Commonwealth government, so as to reach the recommended level by the following dates:-

Category B - 1st January, 1980

Category C - 1st January, 1982

Category D - 1st January, 1984

Category E - 1st January, 1986.

RECOMMENDATION 5 (Page 124)

That college libraries acquire per annum a total number of monograph volumes equal to 8% of the total arrived at by application of the formula in Recommendation 3. This percentage is *additional* to any increase necessary to bring the college's collection up to the total arising from the application of Recommendation 3, and is to be regarded as the minimum level of current acquisition necessary for a collection *to maintain its existing position* relative to the basic standards for adequate service to college communities.

RECOMMENDATION 6 (Page 170)

That in making estimates for the necessary provision of serial collections in C.A.E. libraries, the following formula be applied:-

A. *Current Serial Titles*

1. Basic Collection of general serial titles.	75 titles
Plus for each 50 EFT students. .	1 title
2. For each major undergraduate or postgraduate course area	60 titles
3. For each FTE member of Teaching Staff up to and including 100 FTE.	3 titles
4. For each FTE member of Teaching Staff over 100 FTE and up to and including 200 FTE.	2 titles
5. For each FTE member of Teaching Staff over 200 FTE	1 title
6. For each 50 EFT students	1 duplicate title

B. Retrospective Serial Holdings

1. Basic Collection of general serial titles	400 bibliographic volumes, increasing to a maximum of 1,200 bibliographic volumes within 15 years from the first courses being offered by the college
2. For each major course area	480 bibliographic volumes by the end of the second year in which the course is offered, increasing to a maximum of approximately 1,500 bibliographic volumes within 15 years from initiation of the course
3. For each FTE member of Teaching Staff	20 bibliographic volumes, increasing to a maximum of 60 bibliographic volumes as the college nears its maximum size

RECOMMENDATION 7 (Page 172)

That in the application of the formulae in Recommendation 6, serial titles received by gift or exchange may not be counted so as to form more than 25% of a library's current serial titles, for the purpose of comparison with the recommended level.

RECOMMENDATION 8 (Page 172)

That all C.A.E. libraries reconsider their policies on the receipt of current serials by gift and exchange, and that any college which receives more than 25% of its total current serial titles by gift and exchange initiate a review of its serials collection, to determine whether the titles received by gift and exchange merit the processing and storage costs involved.

RECOMMENDATION 9 (Page 172)

That any C.A.E. library containing retrospective serial holdings of more than 20 bibliographic volumes per current serial title held examine its collection with a view to the possible discarding of older and less used volumes.

RECOMMENDATION 10 (Page 183)

That all C.A.E. libraries include storage facilities for the full range of available non-book materials, so that the use of these materials may be easily promoted amongst students and staff.

RECOMMENDATION 11 (Page 183)

That all C.A.E. libraries provide the associated equipment necessary to enable students and staff to use a full range of non-book materials. The minimum acceptable range of such equipment available in the library includes:-

(a) Slide viewer or projector

(b) Filmstrip viewer or projector

(c) Super-8 mm film projector

(d) Cassette audiotape player/recorder

(e) Video-tape player/recorder

RECOMMENDATION 12 (Page 184)

That, pending the results of a recommended study of non-book materials provision and use, all C.A.E. libraries be provided with an annual fund for the acquisition of non-book materials of at least 10% of the annual funds to be spent on monographs and serials, arrived at after the application of Recommendations 3, 5 and 6.

RECOMMENDATION 13 (Page 206)

That, to compensate for lack of alternative library resources, all C.A.E. libraries situated more than 20 kilometres from the nearest university, other large C.A.E., or State library, receive a resources allocation 10% greater than that which would apply from the application of Recommendations 3, 5, 6 and 12.

C. Recommendations for Improving Budgeting for Collections

RECOMMENDATION 14 (Page 209)

That the Commission on Advanced Education, in conjunction with the Universities Commission, develop indices for changes in the average cost to Australian tertiary libraries of (a) Monograph Volumes, and (b) Current Serial Titles, and that the derivation of this cost data be based primarily on annual movements in actual prices paid by a sample of the libraries of large multidisciplinary colleges and universities in Australia.

RECOMMENDATION 15 (Page 209)

That the Commission on Advanced Education, in conjunction with the Universities Commission, consider the means by which data regarding average acquisition costs of various types of non-book materials may be obtained, and develop a guide, for use by tertiary libraries to determine appropriate funding, when more detailed recommendations of the desirable level of provision of non-book materials are available.

D. Recommendations for Increasing Availability and Use of Library Collections

RECOMMENDATION 16 (Page 235)

That all colleges consider whether the demands being made on their library collections are at a level one would expect to be associated with teaching and learning at a tertiary level, and that in any C.A.E. where per capita borrowing from the library's general monograph collections is less than 20 items per EFT tertiary student per year, the college administration make an examination of the reasons for the low level of usage.

RECOMMENDATION 17 (Page 235)

That each C.A.E. library conduct a 'failure survey', following the basic techniques developed by the University of Cambridge Library Management Research Unit, designed to provide information on the main reasons why documents sought by readers are not available when required.

RECOMMENDATION 18 (Page 235)

That, on the basis of the information provided in this report, and the results obtained from the failure survey recommended in Recommendation 17, all C.A.E. Chief Librarians re-examine their loan policies, reshelving procedures, library guidance and location systems, security procedures, and binding policies, with a view to maximising the practical availability of material owned by the library.

RECOMMENDATION 19 (Page 236)

That distinctions relating to library borrowing rights based entirely on the status of particular members of the college be abolished, and replaced as far as possible by variable loan periods based on the demand for particular works, and that in devising such a system, special attention be given to the needs of external students and, to a lesser extent, part-time students, in C.A.E.'s where these students are served.

RECOMMENDATION 20 (Page 236)

That inter-library loan services be available to all members of a college, and that inter-library loan be facilitated in each metropolitan area by the cooperative provision of a courier delivery service between C.A.E. libraries, and if possible, including university libraries, the State library, and other relevant libraries.

RECOMMENDATION 21 (Page 236)

That the feasibility of setting up a system of inter-institutional personal borrowing rights be discussed by the Association of Librarians of Colleges of Advanced Education and the Committee of Australian University Librarians, and that C.A.E. and university librarians in each State meet to plan the phased introduction of borrowing rights, with the eventual aim of enabling all members of any one institution to have access to the libraries of other tertiary institutions.

RECOMMENDATION 22 (Page 237)

That any C.A.E. library introducing a computer-based circulation system give full consideration to the need to design into the system a means of automatic feedback of data relating to borrowing patterns, to be used for library management purposes in the areas of selection, acquisition, discarding, and stock control.

RECOMMENDATION 23 (Page 237)

That C.A.E. Chief Librarians in each State meet to discuss the desirability and feasibility of establishing a cooperative bindery arrangement, possibly in collaboration with one or more university libraries, designed to ensure a faster processing of serials in demand.

RECOMMENDATION 24 (Page 237)

That each C.A.E. library re-examine its binding policies and priorities for serials, and investigate the economics and desirability of using some form of less permanent binding process, carried out within the library, for the binding of many serial volumes.

RECOMMENDATION 25 (Page 237)

That C.A.E. Chief Librarians in each State consider a cooperative acquisition arrangement for the provision of expensive bibliographical and reference works, and consider the most desirable way in which each library can maintain rapid and priority access to any of these works held in another College of Advanced Education or other library.

RECOMMENDATION 26 (Page 238)

That, for the purposes of collection provision as stated in Recommendations 3, 5, 6 and 12, the library of any branch campus of a College of Advanced Education, situated so far from the main campus that it is not practicable for members of the branch campus to have personal access to, or a daily courier delivery from, the central campus library or adequate alternative library resources, be treated as if it were the library of a independent institution.

RECOMMENDATION 27 (Page 238)

That for each College of Advanced Education which offers courses on more than one campus, for each campus that operates a branch library, an addition of 10% be made to the general collection provision, and an addition of 2½% be made to the 'per course' provision for each course area served primarily by a branch library, to the levels resulting from the application of Recommendations 3, 5, 6 and 12.

E. Recommendations for Improving Quality of Collections

RECOMMENDATION 28 (Page 254)

That all C.A.E. libraries include professional library staff whose main role is in the balanced development of the library's collection, in cooperation with teaching staff, participating in selection of current materials, a coordinated programme of stock review, and promotion of teaching staff interests and participation in collection development.

RECOMMENDATION 29 (Page 254)

That each C.A.E. Chief Librarian, in collaboration with representatives of teaching departments, develop a written collection development policy, updated as necessary each year, with the primary, but not sole, purpose of delineating in detail any areas of collection development to serve needs beyond those of undergraduate teaching and learning.

RECOMMENDATION 30 (Page 255)

That a member of the professional library staff of each College of Advanced Education represent the library on the appropriate Board/Committee of each School or Department which is concerned with new course developments, with the aim of increasing the communication necessary to improve both the quality and availability of the library's collection,in serving course programmes.

RECOMMENDATION 31 (Page 255)

That each School/Department in a College of Advanced Education have a member of its teaching staff designated as its library liason officer, to represent the School/Department on library matters and act as an informal channel of communication with appropriate library staff.

RECOMMENDATION 32 (Page 255)

That all new course programme proposals in a College of Advanced Education be accompanied by a statement from the Chief Librarian outlining the extra capital (i.e. retrospective) and recurrent library collection costs associated with the development, and that such a statement be a mandatory inclusion in any college submission to the Commission on Advanced Education for funding of Post-graduate Diploma and Master's level programmes.

RECOMMENDATION 33 (Page 255)

That full responsiblity for the development of the library's collection in a College of Advanced Education rest with the Chief Librarian, acting with advice from, but not the direction of, teaching staff in the College.

RECOMMENDATION 34 (Page 256)

That the Commission of Advanced Education refer for discussion to the Australian Advisory Council on Bibliographical Resources, the desirability and feasibility of the establishment of a serial publication to review newly published Australian works, designed primarily, but not necessarily exclusively, to act as a selection aid for tertiary libraries, both in Australia and overseas.

RECOMMENDATION 35 (Page 256)

That the Commission on Advanced Education recommend, as a guideline to the administrative bodies of all established Colleges of Advanced Education, that expenditure on library staff salaries and salary costs comprise at least 4% of a college's total annual recurrent budget.

F. Recommendations for Further Study

RECOMMENDATION 36 (Page 262)

That the Commission on Advanced Education finance a study to determine the extent and kind of use that is being made of non-book materials in C.A.E. libraries, based on those college libraries which have invested relatively heavily in the provision of non-book materials, and may be expected to have the widest experience in the use of such materials, and that the findings of the study be utilised to made quantitative recommendations regarding the desirable levels of provision of non-book materials in C.A.E. libraries.

RECOMMENDATION 37 (Page 262)

That the Commission on Advanced Education, in conjunction with the Universities Commission, finance a study to determine the best means of providing external students with access to the library materials that they require for tertiary level studies.

RECOMMENDATION 38 (Page 262)

That the Commission on Advanced Education finance a study to determine in more detail the necessary level of library collection provision associated with the development of Master's degree and Postgraduate Diploma courses.

CHAPTER 1

BACKGROUND TO C.A.E. LIBRARY DEVELOPMENT

Introduction

Any report that seeks to deal with the adequacy of library collections in Colleges of Advanced Education must inevitably concern itself with the educational context within which this adequacy is to be evaluated. The collection within a college library does not arise of its own accord. It is selected, organised, and made available by a series of procedures involving both academic and library staff, and will reflect both groups' views on the purposes which the library serves within the college, and in the wider context, on the roles of the college itself. It is important, therefore, that some attention should be devoted initially to this educational context. Some aspects, such as the size of colleges, are factual, while others, such as the links between teaching method and collection adequacy, are much more open to subjective interpretation. No library is an island, and unless the college library collection adequately serves purposes on which there is a reasonable degree of consensus, both within the college and within the whole advanced education system, then it will be seen to be a failure by those it serves. Similarly, any practical planning measures which seek to set the parameters for library collection development in colleges must reflect consensus views on the purposes which the collections serve if they are to be acceptable to those in the colleges, and to those who provide the financial resources for college libraries.

The Role of Colleges of Advanced Education

The role of the Colleges of Advanced Education has been discussed in considerable detail in a wide variety of publications ever since the Martin report of 1964[1] led to the initial establishment of C.A.E.'s. The differing viewpoints on this role have, fortunately, been more than adequately reviewed by Bryan and Hean in a previous report[2] to the Commission on

Advanced Education - "The Function of the Library in a College of Advanced Education" - and do not need to be repeated here. The basic differences between Colleges of Advanced Education and Universities were outlined in the first report of the Commonwealth Advisory Committee on Advanced Education, which stated that colleges had:

(a) Students with somewhat different types of interests.
(b) A greater concentration upon part-time studies associated with employment, especially in scientific fields.
(c) A more applied emphasis.
(d) A more direct and intimate relationship with industry and other relevant organizations.
(e) Far less attention to post-graduate training and research.
(f) A primary emphasis on teaching.[3]

In spite of the very considerable developments in advanced education and in universities in Australia since that statement in 1966, it is reasonable for us to conclude, as did Bryan and Hean in 1970[4], that these basic differences remain, and may continue to remain, at least in the medium-term. The Commission on Advanced Education has recently reiterated its policy in its Fourth Report:

> "that most courses of study provided in colleges of advanced education must remain directed towards a vocation. The people who attend college courses expect to find the level and nature of their education relevant to the practice of their chosen careers. The colleges must recognise that the community has come to accept this as their role."[5]

In this report, then, we have made the assumption that the basic role of the Colleges of Advanced Education will not change from that outlined as current policy in the Fourth Report of the Commission of Advanced Education. Nevertheless, as the Commission itself emphasized in its Second Report, "we are dealing with an evolving concept not susceptible to close definition",[6] and this report, of necessity, considers the very significant influence which changes in the balance of studies within Colleges of Advanced Education have on the adequacy of library collections.

The assumptions made are:

(a) That the colleges will continue to concentrate on undergraduate studies, in the main consisting of the equivalent of three years full-time post-secondary education, with a smaller number of courses lasting two years full-time, and a few specialised courses of four or even five years in length.

(b) That the subject areas of study, although varying considerably from college to college, will continue to have a high vocational content, particularly in the technological, business, and teacher education areas, but also contain a significant proportion of studies in the social sciences and liberal arts.

(c) That the proportion of students undertaking post-graduate studies may remain relatively small, probably within the 12% limit recently recommended by the Commission[7] for such colleges as the Royal Melbourne Institute of Technology, and the Western Australian Institute of Technology; and that post-graduate programmes will be confined to the Diploma and Master's levels.

(d) That the extent of research in colleges, whether by students on Master's programmes, or by college staff, will remain relatively small, be largely applied in nature, and will not be such as to require substantial extra funding by the Commission on Advanced Education.

(e) That the proportion of part-time and external students in colleges as a whole will remain relatively high, although the proportion of part-time students may well continue to fall slightly in the medium-term, possibly to a proportion similar to that existing in universities, while the proportion of external students may well continue to rise to that pertaining in the universities.

Note: As this report was about to be printed, the authors received a copy of the Commission's Report for 1977-1979[18]. The report places greater emphasis on 'rationalisation' of tertiary education than do previous Commission reports, but there seem to be no statements which contradict our outline of developments in this Chapter, except to suggest a slowing of the trend towards full-time study by C.A.E. students.

TABLE 1

GROWTH OF STUDENT NUMBERS IN COLLEGES OF ADVANCED EDUCATION 1965-1975

Year	Total Number of Students in Colleges	Full-Time Proportion (Per Cent)	Part-Time Proportion (Per Cent)	External Proportion (Per Cent)
1965	24,342	34.5	65.5	-
1968	28,615	41.5	57.8	0.8
1969	31,992	39.0	58.5	2.0
1970	37,692	42.0	54.9	3.1
1971	44,351	44.6	52.3	3.1
1972	52,385	47.1	49.1	3.8
1973 (a)	61,577	48.6	46.2	5.2
1973 (b)	95,127	61.1	33.3	5.6
1974	107,187	60.8	33.2	6.0
1975	125,385	61.4	31.7	6.9

N.B. Figures for 1973(b), 1974 and 1975 include students in former Teachers Colleges.

Sources:
1) *Commission on Advanced Education. Fourth Report. 1975.*
2) *Commonwealth Advisory Committee on Advanced Education. First Report. 1966.*
3) *Commission on Advanced Education. Recommendations for 1976. 1975.*

Factors in the Development of Colleges of Advanced Education Which Affect Library Collections

General trends in the development of Colleges of Advanced Education since 1966 are reviewed in detail in the triennium reports of the Commission on Advanced Education and its predecessors and do not require repetition here. However, there are a number of factors in college development which have a direct bearing on college library collections and their adequacy:-

(a) Number of Colleges

The number of Colleges of Advanced Education increased from 26 in 1966 to 78 in 1975. This growth means that any global recommendations regarding library collections now have to be relevant to a much greater number of colleges, whose local situations may be widely different. Insofar as colleges can be grouped in relation to factors of importance for library collection development, they fall into six categories:-

(1) Large multidisciplinary colleges, concentrating on the technological and business fields, all situated in metropolitan areas - such as the New South Wales Institute of Technology and the Western Australian Institute of Technology. Characteristic of these colleges are large number of students, both in total (over 4,000) and per course, a wide range of courses, and relatively easy access to alternative library resources, such as university or State libraries.

(2) Smaller multidisciplinary colleges, usually with a smaller range of courses, fewer students per course, and with students usually balanced more evenly between a variety of subject areas. The Tasmanian College of Advanced Education and three Victorian colleges in this category are situated in metropolitan areas, but the remainder act as regional colleges and are situated in areas in which they are likely to contain the largest library resources.

(3) Ex-teachers colleges, situated in metropolitan areas or in cities with universitites. These are either wholely or overwhelmingly concerned with courses in or relating to teacher education, have moderate student numbers (range 500-4,000), and are often situated very close to universities, but in any case are within a reasonable distance of alternative larger library resources.

(4) Ex-teachers colleges situated outside metropolitan and university city areas. Again, these are overwhelmingly concerned with teacher education, but have smaller number of students (range 500-1,500), and, in most cases, have no other academic institutions situated nearby.

(5) Other mono-vocational colleges situated in metropolitan areas. These are all concerned with paramedical studies or the arts, including music. Although their total student numbers are small, numbers per course may well be higher than in most multidisciplinary colleges.

(6) Other mono-vocational colleges situated outside metropolitan colleges. These are all connected with agriculture and rural technology, student numbers are small (25-600), and courses are limited in range.

These groupings are to some extent arbitrary, although they are relevant and useful in relation to library requirements, and there are considerable variations between colleges within any group, as the range of student enrolments itself indicates. Also, we are not dealing with a static situation. The rapid expansion of the number of colleges will not continue, although a few new developments are likely for demographic reasons - for instance, the Fourth Report foreshadowed the development of new institutions in New South Wales, Victoria and Queensland in the next five years.[8] However, the Commission's policy of rationalisation of colleges, particularly in relation to mono-vocational colleges, may well mean a slight decline in the total number of colleges in the medium term. The amalgamation of some smaller institutions into the Institutes of Technology in South Australia and Western Australia has already taken place, while similar developments at Ballarat, Bendigo, Geelong and Wagga are in process. It seems possible, or even probable, that all the ex-teachers colleges situated outside metropolitan areas will sooner or later either diversify into true regional multidisciplinary institutions, or amalgamate with other colleges, or with universities. Similarly, a number of the other monovocational colleges, both within and outside metropolitan areas, are likely to amalgamate with other institutions. However, this report allows for the fact that institutions which are essentially mono-vocational are likely to remain part of the advanced education system for a considerable length of time.

Monovocational colleges are likely to require library collections of a size considerably beyond that which would be required were the same range of courses to be added to those existing at a multidisciplinary institution. Even if the other courses at the multidisciplinary college were not closely related in subject scope (in which case there would already exist in the library's collection many titles of at least marginal, and perhaps even central, interest to the new course), there would still not be required the addition of general reading and non-course related material (including general periodicals, newspapers and reference works) essential in all college libraries. Any proposed measures of adequacy must take into account differences between monovocational (or restricted disciplinary) and multidisciplinary institutions for both retrospective and current collection requirements.

(b) Size of Colleges

As well as increasing in number, colleges have been growing in size. There is little doubt that economies of scale are likely to exist in the provision of library collections in colleges, since a rise in the average number of students per course has little effect on the basic number of monograph and serial titles required for that course, and the growth requirement is manifested largely in increased provision for duplication of titles.

Table 2 illustrates the increase in the number of students in all colleges over a ten-year period. These

TABLE 2

AVERAGE NUMBER OF STUDENTS PER COLLEGE OF ADVANCED EDUCATION 1965-1975

Year	Number of Students	Number of Colleges	Average Number of Students per College
1965	24,342	26	936
1968	36,711	42	874
1971	45,113	43	1049
1974	107,187	76	1410
1975	125,385	78	1608

Sources: 1) *Commonwealth Advisory Committee on Advanced Education. First Report. 1966; Second Report. 1969.*

2) *Australian Commission on Advanced Education. Third Report. 1972.*

3) *Commission on Advanced Education. Recommendations for 1976. 1975; Fourth Report. 1975.*

figures need to be treated with caution, as the colleges have been subject to a number of amalgamations, while the great increase in college numbers which occurred in 1973 was the result of the addition of former teachers colleges into the advanced education system.

A fairer picture of the increased size of colleges is shown in Table 3, which illustrates the growth of numbers in five selected colleges which existed on essentially the same sites both in 1965 and 1974. This shows the average number of students in the five colleges to have more than doubled over the period 1965-1974.

Given the Commission's policy of encouraging monodisciplinary colleges to either amalgamate or extend their course range, where this is possible and desirable, it is hard to envisage that the average number of students per college will decline in the medium term, and there seems every expectation that the average size of colleges will increase, even though further growth of some of the

TABLE 3

GROWTH IN TERTIARY STUDENT NUMBERS AT SELECTED COLLEGES 1965-1975

Year	Ballarat I.A.E.	Gordon I.T.	Queensland I.T.	South Australian I.T.	Tasmanian C.A.E.	Average Number per College
1965	372	1046	1281	2122	440	1052
1968	401	925	2122	3404	936	1558
1971	468	1019	2788	3679	1435	1878
1974	778	1408	3712	3792	2261	2390
1975	945	1412	4349	4415	2436	2711

Sources: 1) *Commonwealth Advisory Committee on Advanced Education. First Report. 1966; Second Report. 1969.*

2) *Australian Commission on Advanced Education. Third Report. 1972.*

3) *Commission on Advanced Education. Recommendations for 1976. 1975; Fourth Report. 1975.*

largest colleges, and some others in metropolitan areas, may well be limited because of site difficulties or other practical considerations.

However, the growth in the size of colleges results from two factors:-

(1) An increase in the average number of students enrolled in each course.

(2) An increase in the number of programmes offered by each college.

Whilst the increase owing to factor (1) may lead to economies of scale in library collection provision, growth arising from the second factor may not necessarily do so, unless the new programmes offered bear a close relation to those already existing in a college. When a college initiates a new course programme, the library not only has to find sufficient recurrent funds to buy new monographs and serials relevant to the course on a continuing basis, but has to acquire a retrospective collection of sufficient adequacy to meet the new course requirements at its inception. There is strong evidence to suggest that the range of courses offered by an institution is a major, or even the major, factor in determining the requirements of a college library collection. Many suggested standards for collections, as reviewed later in this report, give central prominence to the relation between quantitative adequacy and range of courses offered. However, it is not simply the number of courses offered that is important but also the relationship between them, because of the nature of the boundaries between courses which leads to overlapping use of some of the same library material in courses conducted by different departments in ostensibly different, though related, subject areas, e.g. pharmacy and chemistry, or management studies and psychology. "Fringe" material for one course is central to another course, and for this reason the introduction in a college of a new course with little relation to those already existing in the college may involve an appreciably greater requirement for library materials than the introduction of a more closely related course. There is no doubt that the subject balance of courses in colleges has shifted away from the original emphasis on applied sciences, technology and business studies towards a greater provision of courses in the social sciences and even in the humanities, even though a strong vocational emphasis has remained. Such new courses tend to involve the use of a wider and deeper range of library materials than is true of the more applied courses, though much may depend on the individual course organizer, and teaching method employed. In spite of substantial Commonwealth unmatched grants over three planning triennia from 1967-1975, the rate of establishment of new courses in colleges, often in totally new areas of study as far as a particular institution is concerned, such as nursing education, public administration, librarianship, community studies or modern languages, has been such that there is strong evidence that many libraries have still been unable to acquire basic retrospective collections in their newer fields of study.

The apparent policy of the Commission to investigate new course proposals more fully with a regard to possible duplication and unviability of student numbers suggests that the rate of introduction of new courses may well be slower than in the past. Nevertheless, moves of many non-metropolitan colleges to diversify courses may result in a persistence of this problem for several years, and this report has taken particular note of the requirements for retrospective collection establishment in relation to new course development (which applies also, of course, to the development of new colleges).

(c) Level of Courses Offered

There is no doubt that the overall level of courses in Colleges of Advanced Education has been upgraded since 1965, and particularly in the 1973-1975 triennium. Most colleges have abandoned their former higher-level technician courses; the introduction of new courses at the three-year diploma level has been far more rapid than at the two-year associate diploma level; a considerable number of courses, while remaining three years in length, have deepened the level of study by conversion from diploma to degree status; some courses have been increased in length from two to three years or three to four years; many new courses have been developed at the graduate diploma level, and to a lesser extent at the postgraduate diploma and Master's degree levels.

This development has considerable significance for library collection adequacy. While there is no conclusive evidence that students undertake any more reading in connection with their studies at higher levels than in, say, their first year of the corresponding course, there is considerable evidence that the range of material required is greater for higher levels of study. Were past trends to continue to the extent that colleges of advanced education developed the great majority of their courses at degree level, together with substantial postgraduate programmes involving substantial research components, then any recommendations in this report would need to be revised considerably. It is possible that the trend in some of the larger colleges may well be continued to the point where they are in practice, though not in name, universities, or at least, technological universities. However, the concern shown by the Commission at these developments in both its Third and Fourth Reports has been taken at face value, and it is assumed that the great majority of students in colleges of advanced education will be engaged in three-year diploma or pass degree-level programmes, with the majority of postgraduate students being engaged in graduate diplomas (i.e. requiring little or no undergraduate prerequisite and essentially of undergraduate level) involving course work, rather than postgraduate diplomas and Master's degree courses involving major research components. In making these assumptions, however, the report shows the substantial extra library collection provision that may be required where a college does have a programme of the research-oriented type.

(d) Type of Students Served

When the colleges of advanced education were established in 1965 the proportion of part-time students in the colleges was high - 65.5 per cent. Since that time there has been an almost continuous fall in the proportion of part-time students, as illustrated in Table 1, to the extent that in 1975 the proportions of full-time and part-time students in colleges were 61.4% and 31.7% respectively. The possible reasons for this change do not need to be dwelt on here, but the change is significant for collection provision. The loading which a part-time student places on the library, as compared with that of a full-time student, is difficult to determine. The Commission itself, in its reports, has variously considered the part-time loading to be from one third to equal that of the full-time student. The part-time student certainly studies fewer course units within a given year than the full-time student, and undoubtedly uses fewer library items on average. However, the part-time students need for longer loan periods, particularly for heavily-used items, which are often kept in some kind of short-loan collection, creates a requirement for extra copies of many titles. The shorter period the part-time student has for study within the library rather than at home or place of employment also creates an extra demand for borrowing, which by keeping material unavailable for other readers, also leads to the necessary provision of extra copies or alternative titles.

It is necessary to consider briefly, therefore, whether the relative decline in part-time students (and it is only relative - the absolute number of part-time students in colleges has increased steadily from 15,950 in 1965 to 39,750 in 1975), is likely to continue. Part of the rapid proportional decline in the 1973-1975 triennium was due to the addition of the ex-teacher colleges into the advanced education system. Each of these had an overwhelming majority of full-time students. However, even without this addition, the decline in the C.A.E.'s existing before 1973 has continued, and it is certainly no longer possible to say, as the Commission did in its Third Report, that "Part-time students continue to provide the majority of enrolments in colleges".[9] However, the relative balance of numbers in colleges had by 1974 almost reached that existing in universities, which had changed very little in recent years, as is indicated in Table 4.

It is reasonable to speculate, therefore, that the proportion of part-time students in colleges will remain in the region of 25-35% in the medium-term, and the projections in the Commission's Fourth Report for 1976-1978 appear to bear out this view, i.e. a substantial minority of students in colleges will remain part-time.

TABLE 4

FULL-TIME, PART-TIME AND EXTERNAL STUDENTS IN COLLEGES OF ADVANCED EDUCATION AND UNIVERSITIES 1965-1975

	Colleges of Advanced Education			Universities		
Year	Full-Time Per Cent	Part-Time Per Cent	External Per Cent	Full-Time Per Cent	Part-Time Per Cent	External Per Cent
1965	34.5	65.5	-	59.9	31.8	8.3
1968	41.5	57.8	0.8	61.8	31.3	6.9
1971	44.6	52.3	3.1	64.2	29.1	6.7
1974	60.8	33.2	6.0	65.1	28.6	6.3
1975	61.4	31.7	6.9	65.4	34.6	

Sources: *1) As for Table 1, for Colleges of Advanced Education.*
2) Universities Commission. Recommendations for 1976. 1975.

It must be remembered also, that the proportion of part-time students varies considerably from college to college - in 1974 from 0% in several of the ex-teachers colleges to over 70% in the case of the New South Wales Institute of Technology.

Table 4 also illustrates the fact that the proportion of external students in colleges has reached a figure similar to that pertaining for many years in universities. Again, it is reasonable to assume, therefore, that the proportion of external students in colleges will not continue to rise and will remain somewhere in the region of 5 - 7% — the figure projected by the Commission's Fourth Report for 1978 was 6.4%.[10] External students, even more than part-time students, are concentrated in particular colleges. In 1975, only 19 colleges had more than 25 external students, but of these, several had a very high proportion of such students, reaching a maximum of 55.6% at Gippsland Institute of Advanced Education. If, as expected, the proportion of external students in colleges remains relatively small in the medium term, then it is likely that such students will tend to be concentrated in selected colleges within each state, where they may form a significant proportion of the total number of students. For these colleges it is essential that any measures proposed take into account the special collection requirements that may be appropriate to serve external students.

(e) Geographical Location

In spite of the considerable increase in the number of colleges from 1965 to 1975, the proportion of colleges situated in non-metropolitan areas has remained around 30-35%. The significant effect of college location as far as library collections are concerned is whether the location is such that staff and students may have reasonably convenient access to library resources other than those of the college library. In 1975, 52 of the 78 colleges were situated either in capital city metropolitan areas or in cities with universities. In all these colleges students and staff would have potential (although not always practical) access to the collections of State or National Libraries, the libraries of universities and other colleges, as well as the resources of larger public libraries. In most cases, access is limited to within-library use of materials, but the students and/or staff of some colleges have negotiated rights to borrow from other institutions, e.g. members of the Western Australian Institute of Technology may borrow from the libraries of both the University of Western Australia and Murdoch University. Arrangements of this kind may spread as college libraries reach a size where they are able to offer something in return to university students, and the reciprocal borrowing rights are in fact reciprocal rather than simply one way. The existence of large collections close to college libraries, upon which students and staff may draw (in practice, rather than in theory) is significant in that it may allow some provision for postgraduate and research study by colleges in some fields without necessarily greatly increasing the demands on the college library. There is no substitute for having collections in college libraries adequate to meet all reasonable needs of all courses offered by the college. Nevertheless, there is no doubt that students and staff located in colleges without any substantial alternative library resources in the vicinity are at a relative disadvantage, and extra provision may need to be considered for college libraries situated in country areas. As the recent report on Regional Colleges in Australia concluded 'This study has confirmed that at a number of points libraries in the regional colleges tend to be worse off than those in city colleges.'[11]

(f) Teaching Methods

There is some evidence to suggest that teaching methods adopted in colleges have developed and changed over the past decade. Successive reports of the Commission have encouraged moves away from the traditional lecture techniques, and greater use of tutorials, project work, self-education, audio-visual aids, viz:-

> "In the past years a rough measure of the work involved and the level attained by any course has been the total class contact hours required of the student. If there ever was any validity in this approach, it is now being seriously challenged by the development of new teaching techniques aimed at self-education."[12]

Factual data is hard to come by, but there is no doubt that in many courses the number of weeks of teaching in the academic year, and the number of contact hours per week for students has declined. This factor alone is likely to have a significant effect on library use - conversations with college librarians have suggested that the introduction of non-technological courses without a high laboratory content is inevitably linked to teaching methods which involve the extra time available, free of class contact, being taken up by student preparation and assignments requiring extended use of library materials. Independent study involving project work, programmed-learning approaches, and tutorial/seminar preparation is simply not possible without the use of printed and audio-visual sources, much of which must involve the college library collection. The quantification of the effect of teaching methodology on collection adequacy is difficult, but it is a problem which this report has had to consider, as it is of crucial importance in determining whether the library collection proves adequate in practice in an individual course situation. It needs to be recognised, however, that the problem is a circular one, in that the teaching method employed may be determined by the library's adequacy, as well as vice-versa. Where a library has a small range of material available, a lecturer is constrained from teaching in a manner which involves extensive library use, since he knows it is likely to be very difficult for students to obtain relevant reading matter conveniently. Lecturers who are aware of the availability of a wide ranging library collection, and are in the habit of using such a collection themselves, are more likely to encourage wider library use by the students they teach, i.e. the library collection has a positive impact on the learning process, as well as a role in following changes in course method and structure. This means that library provision based simply on studies of currently expressed demand for materials is likely to be insufficient, since in many cases teaching staff are still constrained by past and present experience of college library deficiencies.

Changes in teaching method are also likely to be reflected in changes in the kind of material used in college libraries. A change from a lecture/laboratory teaching structure to a seminar and/or independent study methodology tends not simply to mean more use of already-utilised materials. It is likely also to mean a shift away from the use of textbooks towards more reading of periodical articles and general monographs. Greater use of audio-visual material may also be encouraged, although this does not necessarily follow teaching method changes, since much audio-visual material may be used as easily in a group lecture situation as by individual students. However, the development of educational technology and its gradual absorption into the practices of teaching staff in colleges, certainly leads to demands on the college library for an increased range of material other than traditional printed sources. It is unclear whether this demand is totally additive to the underlying demand for print sources, whether it partially substitutes some of the demand for print sources, or even whether it also stimulates increased demands for traditional print sources. However, it is certainly yet another factor of concern in determining collection adequacy.

To sum up, if suggested measures of adequacy for library collections are to have any utility, both for the Commission and for individual colleges, they must be valid for collections in a diverse range of institutions, differing in size, range and level of courses, kinds of students served, teaching methodology and geographical location.

Library Collection Adequacy in Relation to College Purposes

If the adequacy of C.A.E. library collections is to be assessed, the question must be asked, - adequacy for what? The adequacy of a collection may be assessed only in relation to its purposes - and its purposes must reflect the purposes of the college. Following on the discussion above, and from conversations with C.A.E. librarians, the purposes of the C.A.E. library collection seem quite straightforward (and published writings on college libraries all contain variations of these statements):-

(1) To provide the materials required by students at all levels in order to achieve the requirements of their course of studies, and to graduate as contributing members of their chosen profession and the community. It should be noted that such a requirement may go beyond the actual demands of a particular lecturer. Because a particular course is taught in a narrow directive manner, there is no obligation for the library's collection related to that area of study to be narrow. Also, indeed, it may be reasonably argued that it is the library's duty in such a case to compensate for course deficiencies by providing a wider collection which allows students to educate themselves satisfactorily.

(2) To provide the materials required by course organisers (i.e. lecturers and tutors) for their teaching. Any good teacher at the tertiary level may be expected to have read more widely and deeply in his field than the students whom he or she is teaching. Similarly, the teacher must be enabled to keep up continuously with new developments in theory and practice. Such a provision is likely to have considerable implications for journal provision in particular.

(3) To provide research workers, whether students or staff, if such exist in a college, with the specific items they need to support their research programme. This requirement does not necessarily mean that the research material should be owned by the college library, merely that the researcher should have convenient access to the bulk of material required, within a reasonable period of time. In some cases, this may be via negotiated rights at a nearby university library, or via a rapid inter-library loan service.

(4) To provide materials which give all members of the college access to the major developments of civilisation, both historical and contemporary, and promote the individual's intellectual, cultural and social development in the widest sense.

The four purposes mentioned so far relate to the physical adequacy of the collection. A fifth purpose relates to its bibliographic adequacy:-

(5) To provide works which enable college members to obtain and find information in the materials referred to in paragraphs (1) to (4), as quickly and simply as possible. Though this purpose may mean a relatively small commitment in terms of the number of items required, because of the nature of the material needed for bibliographic and reference purposes, the cost may be significant. (Without wishing to complicate the issue at this stage of the discussion, it should be noted the possible extension of the college library's role to include service as a general library for the community in which the library is situated could mean a significant extra provision of stock. The recently published report on Regional Colleges urges college librarians 'to probe more deeply for ways in which college libraries might serve the interests of regional communities',[13] but it did recognise that in this case 'additional funding for college libraries through different agencies would probably be necessary'.)[14]

These statements are obvious and are repeated throughout the literature on this subject. Nevertheless, there is a considerable problem in relating these purposes into measures of adequacy that are other than completely subjective. For instance, what exactly is meant by 'providing materials for student course requirements'? Does it mean being able to provide a copy of any item asked for by a student in connection with his course work? And if so, does this mean immediately? Most college librarians, confronted with these questions, tend to reply 'Yes, ideally, but it would be impossible in practice'. If so, then what are acceptable targets for college libraries to seek to achieve, and what are the collection parameters necessary to meet these targets? The project recognises the central problem posed by such questions and attempts to deal with it, for it must be dealt with sucessfully if the concept of 'adequacy' for a library collection has any meaning.

The Present State of Library Collections in Colleges

Not only must collection adequacy be considered in relation to the purposes which a collection serves, but if measures of adequacy are to be devised which have some utility for current planning purposes, they must be relevant to the existing situation in college libraries. The existing collections in college libraries have been built up as the result of planned development by college librarians, the financial allocation decisions of college administrations and the financial resources provided on the Commission's advice, in the form both of block grants to colleges and specific-purpose grants for collection development. The allocation decisions that have been made have presumably had some relation to the needs of particular college libraries, during their rapid development in the last decade.

There is no doubt that in simple quantitative terms there has been considerable progress in collection development since 1966. The absolute size of the collection in most college libraries that existed in 1966 is now several times that of 1966. Total expenditure on books and periodicals in Institutes of Technology and technical colleges which became C.A.E.'s in 1965 was $102,270.[15] Sixteen colleges *each* exceeded this expenditure in 1975, and the total expenditure on collections in the same 15 colleges was over $2,580,000, with the aid of Commonwealth unmatched grants totalling over $1,000,000.[16] Clearly, then, the expenditure on college library collections was of a quite different order of magnitude, even allowing for the effects of the considerable rate of inflation in the cost of books and periodicals in the period concerned.

Nevertheless, it is certainly much less clear that library collections in all colleges were necessarily adequate or even *more* adequate in 1975 than in 1965. As the Commonwealth Advisory Committee recognised in its first report, colleges libraries in 1965 were seriously inadequate. To quote: "In the visits to the tertiary colleges few deficiencies have struck the Committee more forcibly than the inadequacy of the libraries.'[17] The result of this recognition by the Committee and its successors has been the considerable increases in funding outlined above.

However, seen in relation to both inflation and the greatly increased numbers of students, staff and courses in colleges, even the increases in absolute size of collections in colleges do not look quite so impressive. Table 5 on page 31 outlines the progress made in terms of total bookstock and bookstock per equivalent full-time (EFT) student during 1965-1975, for colleges in existence in 1965, while Table 6 gives similar figures for the ex-teachers colleges over 1970-1975. Tables 7, 8 and 9 on pages 34, 35 and 39 give comparisons of the development of serial title holdings, annual acquisition rates, and non-book materials holdings.

Too much reliance should not be given to the figures of any one college in relation to another as college libraries have been in different stages of development, and local factors may cause the statistics for a particular year to be unrepresentative of the long-term trend. However, taking the statistics as a whole, a number of factors are evident:-

(1) In absolute terms, increases in collection size have been enormous for the 'technological' C.A.E.'s which existed in 1965, whichever measure is studied. Over 1970-1975 absolute increases for all colleges have been significant on all measures, ranging from 132% to 194%.

(2) In per capita terms, increases over 1969-1975 have been much smaller in the 'technological' C.A.E.'s with actual declines in resources per capita in a few cases, and increases overall in the range of 42-54% on the various measures.

(3) Increase per capita in both the ex-teachers colleges and the 'technological' C.A.E.'s over 1970-1975 have been comparable, with a tendency in the teachers colleges to put more resources into monograph accessions, while the 'technological' colleges have built up their current serial holdings to a relatively greater extent.

(4) There has been a general levelling of provision of both monographs and serials on a per-capita basis, i.e. the range of variation in per-capita provision between colleges is much smaller in 1975 than in 1969.

(5) There appears to be a negative correlation between the size of population served by the college library and the per capita provision of monographs and serials, i.e. there are, apparently, economies of scale in collection provision, at least in present practice.

The significance of these and various other trends is discussed fully in the detailed statistical analysis undertaken in Chapter 3.

This introduction has highlighted the problems that arise in merely relating collection adequacy to the internal factors which exist in all colleges of advanced education at the present time. Unfortunately, without a great deal of effort, it is simple to suggest a good many external factors which may affect collection adequacy, and also procedures which may operate in any individual academic library so as to affect both the quality and quantity of the available collection. Since such factors are common not only to Australian Colleges of Advanced Education libraries but also to academic libraries elsewhere, these factors are treated in our review and analysis of the literature in Volume 2.

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CHAPTER 2

RESEARCH DESIGN

The basic research design was developed largely on the basis of conclusions reached as a result of an extensive literature survey (see Volume 2), and after information gathered in visits to C.A.E. libraries. The design resulted from the following conclusions:

(a) There was a lack of reliable statistical data from which conclusions relating to the present adequacy of collections in C.A.E. libraries might be drawn.

(b) There was a lack of adequate empirical survey data relating to the use, operation and current adequacy of C.A.E. libraries, on which recommendations could be based.

(c) Quantitative standards developed for overseas institutions could not simply be taken over as suitable for Australian libraries, although many of the principles on which some of them were based were considered as valid for Colleges of Advanced Education.

(d) Methods of collection evaluation already developed and used overseas were suitable for producing data on which measures of adequacy might be based.

(e) The wide disparities in existing provision of audio-visual materials in libraries suggested that recommendations on audio-visual provision needed to be examined separately from provision for print materials.

(f) The continuing nature of commitments for serial provision in colleges, and the fact that serials appeared to be taking an increasing share of college and university library collection budgets, suggested that studies should be directed towards determining separate requirements for serials and monographs.

(g) It was clear that it would be impossible, within the resources available, to investigate all aspects of collection adequacy on a comprehensive national basis. It was decided, therefore, to concentrate on areas which would be relevant to the greatest number of colleges, which would account for the greater part of the overall financial commitment for libraries within the Colleges of Advanced Education system, and which were considered to be of most importance in their effects on collection adequacy.

Following on these conclusions, the following series of studies was conducted:-

(1) A survey of the statistics relating to the size of holdings in, additions to, and loans from C.A.E. library collections. A pilot study was based on the crude statistics given annually in the journal, *Australian Academic and Research Libraries*, and on the basis of the preliminary results, a more detailed study was undertaken using a wider range of these statistics, adjusted for various factors on the basis individual college library circumstances. A further statistical study was undertaken in order to review development of library collections since the formation of C.A.E.'s in 1966.

(2) A study of the present adequacy of the library collections in five C.A.E. libraries, as assessed by their performance in delivering selected titles in six course areas, using the 'Document Delivery test' technique devised by Richard Orr and his associates.[1]

(3) A study of the requirements for currently published monographs, based on subjective assessment by teaching staff and librarians, of material in six course areas, as listed in the Australian National Bibliography and British National Bibliography.

(4) A study of undergraduate teaching requirements for current serial titles, based on the recommendations of teaching staff in twelve course areas common in C.A.E.'s throughout Australia.

(5) A study of the alternative sources of course reading materials used by students in seven course areas, in six C.A.E.'s, based on a combination of 'critical incident' and 'diary' techniques, over the period of one week in each college.

(6) A subjective examination of the methods suggested in the published literature for ways of improving the quality and availability of collections in C.A.E. libraries.

The rationale behind, and the detailed methodology employed in, each of the studies referred to are described in the chapters that follow. The results obtained were in each case employed, in combination with the findings of previous published work on these problems, to arrive at quantitative and qualitative recommendations on monograph, serial and audio-visual materials provision.

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CHAPTER 3

STATISTICAL ANALYSIS OF C.A.E. LIBRARY COLLECTION DEVELOPMENT

Introduction

The statistics relating to C.A.E. library collection development were analysed with the aim of obtaining information on any significant trends, and in order to form a judgement of the extent to which collection 'adequacy', as expressed in crude numerical terms, might have changed during the period 1965-1975.

The statistics used for analysis were obtained from the following sources:-

(1) For C.A.E.'s which existed as Institutes of Technology and technical colleges in 1965, from the First Report of the Commonwealth Advisory Committee on Advanced Education.

(2) For the ex-teachers' colleges from 1969-1971, from the the library statistics collected from colleges by Mr. T. Taylor of the Western Australian Secondary Teachers' College, for 1973-1974 directly from the librarians of the colleges, and for 1975 from the library statistics collected from colleges by Ms. E. Cook of the Tasmanian College of Advanced Education.

(3) For the other Colleges of Advanced Education, from 1969 to 1975, from the statistics published annually in the journal *'Australian Academic and Research Libraries'*, verified in detail for 1973 and 1974 by data collected directly from librarians of the colleges.

Note: In all calculations in this and other chapters, 'E.F.T.', in relation to students, refers to Equivalent Full-Time, as defined by the Commission on Advanced Education, such that 1 Part-Time student = ½ Full-Time student, and 1 External student = ½ Full-Time student. Per Capita calculations have been made on this basis.

The analysis of the statistics collected was complicated by the fact that it was obvious that the figures in many cases were likely to be unreliable. This was particularly true for statistics relating to years earlier than 1970, but even in figures supplied since that date, it was clear that in many cases estimates rather than the results of actual counts had been supplied. Similarly, variations from year to year in the statistics supplied by individual colleges could be explained in some cases only by assuming that an error had been made, in printing or otherwise, or that the college librarian concerned had put a different interpretation from one year to another on what was to be counted. In some cases, the definitions and categories used in the collection of statistics have changed, so that figures for various years are not strictly comparable. Statistics for some colleges are simply unavailable before the last two or three years.

Nevertheless, with the aid of information provided by college librarians, enough reasonably reliable data was available to enable overall trends in collection development and library use to be delineated. Tables 5, 6, 7, 8 and 9 on pages 31 to 39 indicate the progress made in terms of the size of total bookstock, annual acquisition of monographs, current serial subscriptions, and total non-book holdings, in both absolute and per capita terms, over the period 1965-1975. Table 14 on page 47 indicates the trend in use of C.A.E. libraries, as expressed by total and per capita circulation data, for those colleges for which statistics were available over the period 1969-1974.

Trends in Collection Growth

Various conclusions may be drawn from an examination of the statistics in Tables 5-13. In outlining the trends in various factors relating to collection growth, median increases have been used rather than mean increases so, that the trends are not biased too heavily by the extreme changes experienced by a very small number of libraries.

(1) Monographs

As could be expected from the considerable increase in funding that C.A.E. libraries have received in recent years, all statistics relating to the holdings of monographs show substantial absolute growth of library collections. The increases in the 'technological' college libraries have been more substantial than those in the ex-teachers colleges, both in terms of total volumes and percentage increases since 1970. This is as one would have expected, since in 1970 the teachers college libraries had much more substantial collections in relation to range of courses offered and student numbers. Although the 'technological' colleges have acquired, on average, many more volumes since 1970, in terms of monograph volumes per capita they still lagged behind the teachers colleges in 1975, with a median per capita provision of monographs less than two-thirds that of the ex-teachers colleges (25.6 versus 40.5). In terms of current monograph accessions, the technological and ex-teachers colleges had comparable per capita inputs over the period, with the rather lower per capita input of the teachers colleges in 1969 balanced by 1974 by a slightly higher relative input. Overall, only five colleges had lower annual monograph accessions per capita in 1974 than in 1969, and most colleges increased per capita accessions by between 50% and 100%. We conclude that much of the growth of bookstock in C.A.E. libraries has paralleled the growth of student number in the colleges. Although there has been substantial growth, and very real gains have been made, particularly since 1969, once general growth of courses and student numbers has been accounted for, the increases are not as large as would seem at first sight. Resources available per capita have in fact declined in a few colleges since 1969/70 which suggests that in those colleges library growth has been unable to keep pace with the rate of growth of the college as a whole. However, a decline in per capita resources is, of course, not necessarily indicative of declining library adequacy. All colleges have grown in terms of numbers served since 1969, and it is an assumption of most of the collection standards for colleges (including those of the Commission - see Appendix 1) that there are economies of scale in provision

TABLE 5

INCREASE IN SIZE OF MONOGRAPH COLLECTIONS IN ORIGINAL COLLEGES OF ADVANCED EDUCATION, 1965-1975

Present Name of College	Total Monograph Volumes			Increase		Total Monograph Volumes Per EFT Student (Tertiary)			Increase Per EFT Student	
	1965	1970	1975	1965-75	1970-75	1965	1970	1975	1965-75	1970-75
New South Wales Institute of Technology	4,829	N.A.	90,270	1,769%	N.A.	11.9	N.A.	25.8	117%	N.A.
Ballarat College of Advanced Education	6,400	18,770	41,582	550%	122%	20.5	58.3	48.9	139%	- 16%
Bendigo College of Advanced Education	8,500	23,262	45,996	441%	98%	32.1	47.3	49.5	54%	5%
Caulfield Institute of Technology	6,320	20,070	69,301	997%	245%	5.1	13.6	22.8	347%	68%
Footscray Institute of Technology	4,560	25,000	40,028	778%	60%	5.0	31.0	25.6	412%	- 17%
Gippsland Institute of Advanced Education	4,430	N.A.	23,187	424%	N.A.	20.0	N.A.	25.3	27%	N.A.
Gordon Institute of Technology	9,200	29,500	57,300	523%	94%	11.6	43.4	47.6	310%	10%
Preston Institute of Technology	4,660	9,522	26,211	462%	175%	7.8	14.6	21.5	176%	47%
Royal Melbourne Institute of Technology	23,380	52,977	119,841	413%	126%	5.4	9.9	16.5	206%	67%
Swinburne College of Technology	20,120	32,000	90,073	348%	181%	11.3	13.4	27.4	142%	104%
South Australian Institute of Technology (Adelaide)	11,000	39,500	73,900	572%	87%	9.4	21.2	25.2	168%	19%
Western Australian Institute of Technology (including School of Mines)	29,500	38,000	154,387	423%	306%	21.2	11.1	22.2	5%	100%
Tasmanian College of Advanced Education	8,000	N.A.	124,675	1,458%	N.A.	34.6	N.A.	59.6	72%	N.A.
Median	8,000	(27,250)	69,301			11.6	(17.6)	25.6		
Increase in Median				766%	132%				121%	42%

TABLE 6

INCREASE IN SIZE OF MONOGRAPH COLLECTIONS IN EX-TEACHERS COLLEGES, 1970-1975

Present Name of College	Total Monograph Volumes		Increase	Total Monograph Volumes Per EFT Student (Tertiary)		Increase Per EFT Student
	1970	1975	1970-75	1970	1975	1970-75
Goulburn College of Advanced Education	16,354	39,774	143%	44.2	50.6	14%
Newcastle College of Advanced Education	32,598	60,187	85%	19.4	30.9	59%
Northern Rivers College of Advanced Education	7,328	25,800	252%	48.5	45.3	- 7%
Riverina College of Advanced Education	33,477	70,050	109%	74.4	40.2	-46%
Sydney Kindergarten Teachers College	17,073	39,607	132%	87.6	130.3	49%
Sydney Teachers College	121,339	139,864	15%	30.2	59.3	96%
Wollongong Institute of Education	30,751	43,238	41%	39.7	43.8	10%
Melbourne State College	55,755	101,847	83%	54.3	26.9	-50%
State College of Victoria - Bendigo	22,331	26,430	18%	52.1	33.4	-36%
State College of Victoria - Burwood	28,833	64,849	125%	39.0	47.6	22%
State College of Victoria - Coburg	27,789	39,954	44%	41.9	38.0	- 9%
State College of Victoria - Frankston	21,650	44,750	106%	28.9	42.6	47%
State College of Victoria - Geelong	20,100	33,727	68%	34.6	49.7	44%
State College of Victoria - Hawthorn	31,500	30,120	- 4%	37.5	23.3	-38%
State College of Victoria - Rusden	16,568	56,405	240%	12.0	28.9	41%
State College of Victoria - Toorak	25,020	44,304	77%	32.3	37.0	15%
Mount Gravatt College of Advanced Education	7,762	53,144	585%	11.0	35.7	225%
North Brisbane College of Advanced Education	17,705	33,915	92%	23.0	34.9	52%
Townsville College of Advanced Education	5,000	27,339	447%	13.6	51.9	282%
Adelaide College of Advanced Education	33,439	68,050	104%	21.4	47.0	120%
Kingston College of Advanced Education	4,812	14,741	206%	47.2	40.7	-14%
Murray Park College of Advanced Education	30,912	63,816	106%	30.6	50.9	66%
Salisbury College of Advanced Education	17,054	34,711	104%	48.7	40.2	-17%
Sturt College of Advanced Education	24,786	56,164	127%	23.4	54.1	131%
Torrens College of Advanced Education	27,083	77,158	185%	24.2	33.8	40%
Claremont Teachers College	25,458	37,624	48%	37.4	45.4	21%
Mount Lawley Teachers Colllege	3,300	36,374	1002%	22.0	34.1	55%
Western Australian Secondary Teachers College	19,190	38,259	90%	14.4	26.0	81%
Median	23,559	41,596		33.5	40.5	
Increase in Median			77%			21%

of bookstock, i.e. recommended per capita provision becomes smaller as the college becomes larger.

There has apparently been a levelling-up process for the weaker college libraries, and there was by 1974 a much more even per capita provision from college to college. Nevertheless, it is clear from Tables 11, 12 and 13 on pages 43, 44, and 45 that in relation to the standards* suggested in the Second Report of the Commonwealth Advisory Committee on Advanced Education in 1969 as '... to be achieved in a relatively short space of time'[1], many libraries had not been able to meet the interim standards by the end of 1975, inspite of substantial growth. It seemed clear that as long as student numbers continued to grow at the rate achieved during 1965-1975, many libraries would be unable to meet the 'Wark' standard for a number of years. However, the easing of the rate of growth of student numbers in 1976, which is likely to continue for at least 1977 to 1979, is likely to result in most colleges achieving the standard earlier than

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* *Note:* The 'WARK' standards, as expressed in the Second Report of the C.A.C.A.E. and Third Report of the A.C.A.E., are ambiguous in their interpretation. In applying the standards for monograph holdings and serial subscriptions for each college in Tables 11-13, the assumption has been made that the smallest college in each 'category' was to reach the minimum collection level recommended, and that a college with a greater number of students than the minimum for each category was to obtain extra resources on a pro-rata basis, distributed equally throughout the category, until the college reaches the minimum student numbers to be placed in the next largest category. Colleges in Category 5 with more than 3,500 students have been assumed to warrant extra resources beyond the Category 5 minimum, increasing on the same per capita basis as between Category 4 and Category 5. We would stress that other interpretations of the standards are possible, but we regard our own interpretation as the only one consistent with the requirement for steadily increasing resources with increasing student numbers. It avoids such ludicrous propositions as a college with 999 students (Category 2) having a recommended 50,000 monograph volumes, and one with 1,000 students (Category 3) having a recommended 80,000 monograph volumes. We cannot believe this interpretation to have been the intention of the Committee. Our interpretation does, however, suggest recommended levels for monographs higher than was assumed by other commentators when the standards were first published. See Appendix 1 for a full statement of the 'Wark' standards (Volume 2, pages 142, 144).

TABLE 7

INCREASE IN CURRENT SERIAL SUBSCRIPTIONS AND ANNUAL MONOGRAPH ACCESSIONS IN ORIGINAL COLLEGES OF ADVANCED EDUCATION, 1969-1974

Present Name of College	Current Serial Subscriptions		Increase	Current Serial Subscriptions Per FTE Staff		Increase Per FTE Staff	Monograph Accessions		Increase	Monograph Accessions Per EFT Student		Increase Per EFT Student
	1969	1974	1969-74	1969	1974	1969-74	1969	1974	1969-74	1969	1974	1969-74
Ballarat College of Advanced Education	542	960	77%	9.7	10.6	9%	2,592	6,028	133%	6.4	6.9	8%
Bendigo College of Advanced Education	436	1,217	179%	6.5	11.5	77%	1,939	5,935	206%	4.3	7.4	72%
Caulfield Institute of Technology	421	1,656	293%	3.2	6.4	100%	3,151	19,994	535%	1.6	7.4	363%
Gordon Institute of Technology	1,050	1,104	5%	9.1	7.7	-15%	6,560	6,970	6%	7.5	5.8	-23%
Prahran College of Advanced Education	98	460	369%	1.8	5.6	211%	620	6,800	997%	1.0	9.5	850%
Royal Melbourne Institute of Technology	1,691	3,971	135%	4.9	5.3	9%	9,560	15,149	58%	1.5	1.9	27%
Swinburne College of Technology	961	3,150	228%	6.4	10.7	67%	4,963	15,888	220%	1.7	5.2	205%
Warrnambool Institute of Advanced Education	139	500	260%	5.3	10.0	89%	1,133	5,000	341%	7.3	14.7	101%
Darling Downs Institute of Advanced Education	550	2,222	304%	8.6	17.9	108%	2,894	18,020	523%	10.4	14.1	36%
Queensland Institute of Technology	1,437	2,460	71%	8.1	4.3	-47%	3,589	9,390	162%	2.2	3.6	64%
South Australian Institute of Technology	630	1,850	194%	2.8	4.6	63%	11,777	9,750	-17%	4.8	3.6	-25%
Western Australian Institute of Technology	2,093	5,233	150%	9.1	10.0	10%	4,936	27,820	464%	1.5	4.2	180%
Canberra College of Advanced Education	664	3,059	361%	16.2	11.9	-27%	13,400	25,272	89%	7.6	9.7	-87%
Median	630	1,850		6.5	10.0		3,589	9,750		4.8	6.9	
Increase in Median			194%			54%			172%			44%

TABLE 8

INCREASE IN CURRENT SERIAL SUBSCRIPTIONS AND ANNUAL MONOGRAPH ACCESSIONS IN EX-TEACHERS COLLEGES, 1969-1974

Present Name of College	Current Serial Subscriptions		Increase	Current Serial Subscriptions Per FTE Staff		Increase Per FTE Staff	Monograph Accessions		Increase	Monograph Accessions Per EFT Student		Increase Per EFT Student
	1969	1974	1969-74	1969	1974	1969-74	1969	1974	1969-74	1969	1974	1969-74
Alexander Mackie C.A.E.	256	512	100%	5.2	7.5	75%	2,088	3,416	64%	5.0	5.3	6%
Armidale C. A. E.	475	685	44%	7.7	6.3	-18%	1,582	1,509	-5%	3.0	1.6	-46%
Mitchell C. A. E.	554	2,441	341%	15.0	18.6	24%	823	13,536	1,545%	2.0	11.3	463%
Newcastle C. A. E.	756	592	-22%	9.9	4.0	-60%	2,833	8,104	186%	1.9	4.9	156%
Riverina C. A. E.	143	684	378%	3.4	6.4	88%	1,418	12,656	793%	3.7	9.9	168%
Sydney Kindergarten Teachers College	120	190	58%	10.9	7.6	-30%	1,190	8,986	655%	6.8	28.4	318%
State College of Victoria												
- Ballarat	180	418	132%	4.6	7.3	59%	1,500	4,920	228%	3.3	8.1	144%
- Bendigo	82	300	266%	2.0	4.8	142%	1,485	4,858	227%	3.6	7.3	101%
- Coburg	220	345	57%	3.7	3.8	1%	2,483	4,079	64%	4.0	4.5	14%
- Frankston	96	339	253%	1.6	4.4	175%	1,981	6,500	233%	2.9	7.4	154%
Melbourne State College	278	1,024	268%	2.4	2.9	21%	3,781	12,450	229%	3.9	3.7	-5%
- Rusden	372	790	112%	6.6	4.7	-29%	3,123	10,638	241%	2.6	6.0	130%
- Toorak	231	450	95%	2.8	5.4	91%	3,000	6,734	124%	3.8	7.3	93%
Kelvin Grove C. A. E.	236	452	92%	2.7	3.6	35%	2,261	12,560	456%	1.7	8.4	396%
Mount Gravatt C. A. E.	140	595	325%	4.8	6.0	24%	4,109	14,167	245%	8.9	11.3	27%
North Brisbane C. A. E.	148	493	233%	3.4	7.6	123%	2,545	4,572	80%	3.0	5.4	80%
Townsville C. A. E.	150	766	411%	13.6	20.7	52%	3,000	4,434	48%	14.2	9.4	-34%
Adelaide C. A. E.	407	988	143%	8.5	10.7	26%	2,700	12,053	346%	1.8	8.9	396%
Murray Park C. A. E.	466	943	102%	8.4	10.6	26%	4,835	6,902	43%	5.1	5.9	15%
Sturt C. A. E.	490	1,305	166%	14.6	18.6	28%	5,867	8,947	52%	6.9	10.1	47%
Torrens C. A. E.	288	695	141%	4.4	4.5	2%	4,777	14,363	201%	5.0	7.6	51%
Claremont Teachers College	178	297	67%	2.8	5.0	77%	1,014	3,678	263%	1.5	5.8	287%
Graylands Teachers College	142	275	94%	3.3	5.9	77%	1,268	3,680	190%	2.6	7.5	190%
Western Australian Secondary Teachers College	697	1,255	80%	16.8	17.0	1%	3,905	4,419	13%	3.7	3.7	0%
Median	233.5	593.5		4.7	6.15		2,514	6,818		3.65	7.35	
Increase in Median			154%			31%			171%			101%

might have been predicted from the tables shown. Achievement of the Commission's interim standards is not necessarily related to achievement of collection adequacy, but it does indicate that the 1969 planning targets should be achieved in most colleges within the next two or three years, although this is considerably later than was originally planned by the Commission. However, this situation is not as clear-cut as it might seem, as observations in visits to various colleges suggest that, particularly in some of the college libraries that have been established for many years (i.e. before their establishment as C.A.E.'s), a substantial proportion of the library's bookstock consists of older material likely to be of very little current value to undergraduate students. If this is indeed the case, and without a detailed survey in each library it is impossible to establish the true position, then clearly some of the older libraries need to undertake a review of their stock for the purposes of discarding material no longer required, before any true comparisons are undertaken of their position vis-a-vis recommended standards of collection provision.

(2) Serials

The growth of current serial subscriptions in colleges has also been impressive, as illustrated in Tables 7 and 8. In fact, the median increases show that total serial provision has apparently increased at a relatively faster rate than provision of monographs in the majority of colleges of all kinds, both in absolute terms, and to a lesser extent, in per capita terms. (The per capita provision for serial holdings has been linked to numbers of FTE teaching staff rather than EFT students, because the provision of serial titles is considered generally to be of more direct relevance to teaching requirements than undergraduate student requirements, i.e. a wider range of periodical titles is needed by staff, for teaching purposes and in order to keep up to date with the development of their fields of expertise, than is likely to be used by students. However, teaching staff and student numbers are, of course, closely linked.

There are a number of possible reasons for this apparently greater rate of serial growth, and for the fact that, as Tables 11, 12 and 13 show, most colleges have exceeded the Commission's interim recommendations for periodical provision, in some cases by a substantial amount:-

(a) Serial provision was already more adequate than monograph provision in colleges libraries prior to the influx of Commonwealth government grants, and hence less ground needed to be made up. An examination of the 1969 statistics in Tables 7 and 8 suggests that this was true in many cases, in relation to the Commission's standards.

and/or

(b) Since demand for periodicals is more directly related to teaching staff requirements (both for teaching and their own research), while monogrpah demands are more often made by students, librarians may have responded more to teaching staff pressures than to student pressures.

and/or

(c) The Commission's periodical standards are much lower, relatively, than those for monographs, in terms of college needs as seen by their librarians. It is not easy to decide whether this is the case. Reference to other standards proposed (see Appendix 1) shows that levels both higher and lower than the Commission's recommendations have been suggested elsewhere. In the absence of direct empirical evidence of college needs for periodicals, nothing further may be concluded.

and/or

(d) The Commission's interpretation in its standards of what constitutes a 'periodical' differs from that used by C.A.E. libraries in reporting their statistics of 'current serial holdings'. This is possible, since there is no universal agreement amongst librarians on exactly what constitutes a 'periodical' or 'serial', and the dividing line between monographs and serials differs from library to library. The current definition of a 'periodical' in statistical returns to the Commission (see Appendix 8) is a wide one, encompassing virtually all material in the form of a series. It may be doubted whether the Commission's interim recommendations on periodical provision were considered to include, for example, handbooks and calendars of colleges, annual directories of organisations, or monographs in series. Statistical returns from colleges appear to vary in their interpretations, and it is clear that more accurate guidelines should be available when consideration of periodical holdings is being made in relation to any standards.

and/or

(e) The growth rate in publication of relevant new serial titles may have been faster than the growth rate of publication of new monograph titles over the period concerned. This may have influenced college librarians in deciding to devote relatively more of their resources to the provision of serials. Again, this is difficult to decide one way or the other. The few major studies of literature growth[2,3,4] do suggest that serial growth is possibly slightly greater than for monographs, but whether this is true also for material suitable for college libraries would be impossible to determine without a major study.

Whatever the reasons for the relatively higher rate of growth of serial provision, the continuing nature of serial commitments makes it imperative that college libraries should review their continued collection development if serial provision is not to use an ever-increasing proportion of the collection budget, possibly at the expense of more urgent needs of undergraduate students.

(3) Non-Book Materials

As regards the provision of non-book materials, which have been taken to include all library materials other than printed books, pamphlets and serials, musical scores, and microforms, it is difficult to determine overall trends. Table 9 illustrates the growth in absolute terms in the original

TABLE 9

INCREASE IN HOLDINGS OF NON-BOOK MATERIALS IN ORIGINAL COLLEGE OF ADVANCED EDUCATION LIBRARIES, 1970-1975

Present Name of College	Total Non-Book Items Held								Increase 1970-75	
	1970		1972		1974		1975			
	Slides	Other	Slides	Other	Slides	Other	Slides	Other	Slides	Other
New South Wales Institute of Technology	N.A.	N.A.	N.A.	N.A.	1,493	1,558	3,730	3,268	N.A.	N.A.
Ballarat College of Advanced Education	701	3	2,661	7	3,144	32	4,058	74	3,357	71
Bendigo College of Advanced Education	355	523	1,044	525	1,651	2,526	1,977	3,002	1,622	2,479
Caulfield Institute of Technology	116	196	1,538	232	1,248	598	N.A.	1,033	N.A.	837
Footscray Institute of Technology	0	5	0	29	107	111	1,269	218	1,269	213
Gippsland Institute of Advanced Education	N.A.	N.A.	N.A.	N.A.	N.A.	286	75	396	N.A.	N.A.
Gordon Institute of Technology	300	290	1,282	985	1,513	1,388	1,561	1,412	1,261	1,122
Preston Institute of Technology	0	2	544	304	544	N.A.	1,300	312	1,300	310
Royal Melbourne Institute **of Technology**	5,747	251	13,083	1,798	22,492	6,199	28,478	9,444	2,731	9,193
Swinburne College of Technology	470	395	641	558	533	1,125	1,178	1,854	708	1,459
Darling Downs Institute of Advanced Education	0	130	1,311	614	2,549	2,551	3,424	2,881	3,424	2,751
Queensland Institute of Technology	0	83	0	145	664	544	4,885	2,766	4,885	2,683
South Australian Institute of Technology (Adelaide)	3,000	126	3,500	465	5,500	1,735	7,100	2,696	4,100	2,570
Western Australian Institute of Technology	5,000	796	15,000	2,836	26,680	6,374	32,814	9,616	27,814	8,820
Tasmanian College of Advanced Education	N.A.	N.A.	257	22,780	26,432	34,850	34,218	40,526	N.A.	N.A.
Canberra College of Advanced Education	636	351	636	945	5,117	1,749	6,163	14,162	5,527	13,811
									Increase in Median	
Median	355	196	1,163	542	2,549	1,125	3,730	2,731	3,385	2,535

Note: The definition on 'non-book materials' has been taken to indicate all materials other than books and pamphlets, periodicals and other printed serials, music scores, and microforms.

C.A.E. libraries. Statistics for slide holdings have been shown separately as they comprise a large proportion of the total in numerical terms, but represent a relatively low financial commitment. Percentage increases have not been calculated since in many cases they would be meaningless, because of the negligible holdings of many libraries in 1970, the first year for which reliable statistics relating to holdings are available. Of the colleges listed in Table 9, only three could be said to have built up by 1975 substantial (i.e. numerically more than 5% of their monograph holdings) collections of non-book materials other than slides. However, Table 10 illustrates that several ex-teachers colleges now have relatively substantial holdings of non-book materials (e.g. Melbourne State College held 21,934 slides and 14,147 other non-book items in 1975), but no detailed comparative statistics are available over the same period.

A closer examination of the individual statistics suggests:-

(a) The growth of non-book holdings in colleges has been extremely uneven, and there are still far wider variations in provision of these materials from college to college than there are for print materials. It is possible that some of these variations may be explained by the nature of courses offered in individual colleges. For example, it may be that colleges offering courses in art or architecture have far greater requirements for slides and other visual materials than colleges without such courses. A similar possibility arises for audio materials in colleges offering courses in music. In the ex-teachers colleges, the need of students to have access to examples of curriculum resources which they may actually use in teaching in schools is also likely to require a greater investment in non-book materials than might be the case in other colleges without a heavy commitment to teacher education.

The implication is that the adequacy of non-book material provision may be far more subject-dependent than for print materials, and may not be subject to

TABLE 10

HOLDINGS OF NON-BOOK MATERIALS BY SOME EX-TEACHERS COLLEGES, 1975

Name of College	Slides	Other Items
Nepean College of Advanced Education	3,974	8,475
Newcastle College of Advanced Education	N.A.	5,288
Northern Rivers College of Advanced Education	664	2,229
Nursery Secondary Teachers College	N.A.	1,218
Sydney Kindergarten Teachers College	N.A.	2,809
Sydney Teachers College	3,916	2,837
State College of Victoria - Burwood	3,504	2,200
State College of Victoria - Coburg	1,053	4,867
State College of Victoria - Frankston	2,040	3,975
State College of Victoria - Geelong	800	758
State College of Victoria - Hawthorn	5,075	2,739
State College of Victoria - Institute of Early Childhood Education	N.A.	2,581
Melbourne State College	21,934	14,147
State College of Victoria - Rusden	18,761	3,938
State College of Victoria - Toorak	300	7,007
Mount Gravatt College of Advanced Education	N.A.	670
North Brisbane College of Advanced Education	1,255	N.A.
Townsville College of Advanced Education	19,207	4,615
Adelaide College of Advanced Education	N.A.	495
Kingston College of Advanced Education	4,020	190
Murray Park College of Advanced Education	8,703	3,215
Torrens College of Advanced Education	11,384	5,310
Churchlands Teachers College	3,571	7,251
Mount Lawley Teachers College	N.A.	5,402
Median	3,916	3,215

general recommendations which do not take subject variations into account. On the other hand, some of the wide variations between colleges which appear to have similar subject ranges cannot be explained other than in terms of the subjective viewpoints of the library and teaching staff of the various colleges as to the value of non-book materials in relation to the college programme. A further possiblity, which was noted on visits to colleges, is that in some colleges there exist substantial collections of non-book materials which are held in teaching departments and whose existence is not being recorded in the library statistical returns. Regardless of the reasons for the existence of such collections, it appears to us important that statistical reporting of non-book holdings should reflect total provision in all colleges.

(b) There appears to have been a tendency for many colleges to 'bulk buy' non-book materials, i.e. to decide in one particular year to buy a substantial number of maps, or tapes, etc., and then the following year to buy very little such material. Although there has been growth of holdings of non-book materials, this growth has not consisted of continuous rises from year to years. This may be partially explained because many libraries are investing for the first time in some types of audio-visual material, and are creating retrospective holdings. But it also indicates that few colleges are yet acquiring non-book materials in a systematic way, as the materials are currently published, as they do with print materials. This may be due to the fact that the bibliography of audio-visual materials was until recently very underdeveloped. It is still true that few non-print materials are reviewed in the sources commonly read by teaching staff, and from which they often make recommendations for purchase to the library. It seems likely that many college libraries need at this stage to take a more active role in bringing sources related to new non-book materials to the attention to teaching staff, and to

TABLE 11

COMPARISON OF 1975 MONOGRAPH HOLDINGS AND CURRENT SERIAL SUBSCRIPTIONS WITH 'WARK' STANDARDS

(a) MULTIDISCIPLINARY COLLEGES

Present Name of College	Total Monograph Volumes 1975	'WARK' Standard* (Volumes)	% of Standard	Current Serial Subscriptions 1975	'WARK' Standard* (Periodical Titles)	% of Standard
Mitchell College of Advanced Education	69,645	97,620	71.3%	1,350	964	140.0%
New South Wales Institute of Technology	90,270	149,866	60.2%	3,005	2,995	100.3%
Riverina College of Advanced Education	70,050	94,860	73.8%	1,085	923	117.6%
Ballarat College of Advanced Education	41,582	68,750	60.5%	765	512	149.4%
Bendigo College of Advanced Education	45,996	74,750	61.5%	1,601	612	261.6%
Caulfield Institute of Technology	69,301	134,800	51.4%	2,469	2,392	103.2%
Footscray Institute of Technology	40,028	91,220	43.9%	983	868	113.2%
Gippsland Institute of Advanced Education	23,187	73,625	31.5%	807	593	136.1%
Gordon Institute of Technology	57,300	84,080	68.1%	1,242	761	163.2%
Prahran College of Advanced Education	27,715	75,200	36.9%	750	620	121.0%
Preston Institute of Technology	26,211	84,340	31.1%	980	765	128.1%
Royal Melbourne Institute of Technology	119,841	224,980	53.3%	4,734	4,125	114.8%
Swinburne College of Technology	90,073	142,900	63.0%	3,461	2,716	127.4%
Warrnambool Institute of Advanced Education	26,678	45,958	58.0%	770	200	385.0%
Capricornia Institute of Advanced Education	31,867	80,540	39.6%	1,150	708	162.4%
Darling Downs Institute of Advanced Education	51,595	93,180	55.4%	2,581	898	287.4%
Queensland Institute of Technology	56,532	138,133	40.6%	3,285	2,525	130.1%
South Australian Institute of Technology (Adelaide)	73,900	121,633	60.8%	885	1,356	65.3%
Torrens College of Advanced Education	77,158	109,500	70.5%	1,835	1,865	98.4%
Western Australian Institute of Technology	154,387	219,100	70.5%	6,132	4,037	151.9%
Tasmanian College of Advanced Education	124,675	103,067	121.0%	3,270	1,128	289.9%
Canberra College of Advanced Education	119,758	134,500	89.0%	3,328	2,380	139.8%
Median	63,301	96,240	60.4%	1,476	944	133.1%

* See Note on page 33.

TABLE 12

COMPARISON OF 1975 MONOGRAPH HOLDINGS AND CURRENT SERIAL SUBSCRIPTIONS WITH 'WARK' STANDARDS

(b) EX-TEACHERS COLLEGES

Present Name of College	Total Monograph Volumes 1975	'WARK' Standard* (Volumes)	% of Standard	Current Serial Subscriptions 1975	'WARK' Standard* (Periodical Titles)	% of Standard
Alexander Mackie College of Advanced Education	42,774**	53,300	80.3%	512**	255	200.8%
Armidale College of Advanced Education	57,597**	82,775	69.6%	685**	621	110.3%
Goulburn College of Advanced Education	39,774	63,950	62.2%	399	433	92.1%
Nepean College of Advanced Education	40,392	49,000	82.4%	900	200	450.0%
Newcastle College of Advanced Education	60,187	98,940	60.8%	753	984	76.5%
Northern Rivers College of Advanced Education	25,800	43,750	59.0%	574	200	287.0%
Sydney Kindergarten Teachers College	39,607	37,667	105.2%	201	200	100.5%
Sydney Teachers College	139,864	111,967	124.9%	1,742	1,479	117.8%
Wollongong Institute of Education	43,238	79,025	54.7%	635	684	92.8%
State College of Victoria - Ballarat	33,016**	50,750	65.1%	418**	213	196.2%
State College of Victoria - Bendigo	26,430	39,400	67.1%	540	440	122.7%
State College of Victoria - Burwood	64,849	87,260	74.3%	629	809	77.8%
State College of Victoria - Coburg	39,954	81,020	49.3%	887	753	117.8%
State College of Victoria - Frankston	44,790	81,020	55.2%	364	753	48.3%
State College of Victoria - Geelong	33,727	55,850	60.4%	510	298	171.1%
State College of Victoria - Hawthorn	30,120	85,800	35.1%	559	787	71.0%
Melbourne State College	101,847	155,720	65.4%	1,548	3,086	50.2%
State College of Victoria - Rusden	56,405	99,000	57.5%	1,040	985	105.6%
State College of Victoria - Toorak	44,304	83,920	52.8%	800	759	105.4%
Brisbane Kindergarten Teachers College	19,400**	45,292	42.8%	144**	200	72.0%
Kelvin Grove College of Advanced Education	55,093**	89,940	61.3%	452**	849	53.2%
Mount Gravatt College of Advanced Education	53,144	89.780	59.2%	1,199	847	141.6%
North Brisbane College of Advanced Education	33,915	77,900	43.5%	905	665	136.1%
Townsville College of Advanced Education	27,339	46,958	58.2%	922	200	461.0%
Adelaide College of Advanced Education	68,050	88,980	76.5%	1,094	835	131.0%
Murray Park College of Advanced Education	63,816	85,060	75.0%	940	776	121.1%
Salisbury College of Advanced Education	34,711	69,800	49.7%	1,230	530	232.1%
Sturt College of Advanced Education	56,164	80,780	69.5%	1,359	712	190.9%
Churchlands Teachers College	29,250	82,160	35.6%	733	732	100.1%
Claremont Teachers College	37,624	67,100	56.1%	542	485	111.8%
Graylands Teachers College	23,993**	45,333	52.9%	275**	200	137.5%
Mount Lawley Teachers College	36,374	81,320	44.7%	635	720	88.2%
Western Australian Secondary Teachers College	33,544**	84,000	39.9%	1,255**	760	165.1%
Median	39,954	81,020	60.4%	685	712	117.8%

* See Note on page 33.

** 1974 Statistics

TABLE 11

COMPARISON OF 1975 MONOGRAPH HOLDINGS AND CURRENT SERIAL SUBSCRIPTIONS WITH 'WARK' STANDARDS

(a) MULTIDISCIPLINARY COLLEGES

Present Name of College	Total Monograph Volumes 1975	'WARK' Standard* (Volumes)	% of Standard	Current Serial Subscriptions 1975	'WARK' Standard* (Periodical Titles)	% of Standard
Mitchell College of Advanced Education	69,645	97,620	71.3%	1,350	964	140.0%
New South Wales Institute of Technology	90,270	149,866	60.2%	3,005	2,995	100.3%
Riverina College of Advanced Education	70,050	94,860	73.8%	1,085	923	117.6%
Ballarat College of Advanced Education	41,582	68,750	60.5%	765	512	149.4%
Bendigo College of Advanced Education	45,996	74,750	61.5%	1,601	612	261.6%
Caulfield Institute of Technology	69,301	134,800	51.4%	2,469	2,392	103.2%
Footscray Institute of Technology	40,028	91,220	43.9%	983	868	113.2%
Gippsland Institute of Advanced Education	23,187	73,625	31.5%	807	593	136.1%
Gordon Institute of Technology	57,300	84,080	68.1%	1,242	761	163.2%
Prahran College of Advanced Education	27,715	75,200	36.9%	750	620	121.0%
Preston Institute of Technology	26,211	84,340	31.1%	980	765	128.1%
Royal Melbourne Institute of Technology	119,841	224,980	53.3%	4,734	4,125	114.8%
Swinburne College of Technology	90,073	142,900	63.0%	3,461	2,716	127.4%
Warrnambool Institute of Advanced Education	26,678	45,958	58.0%	770	200	385.0%
Capricornia Institute of Advanced Education	31,867	80,540	39.6%	1,150	708	162.4%
Darling Downs Institute of Advanced Education	51,595	93,180	55.4%	2,581	898	287.4%
Queensland Institute of Technology	56,532	138,133	40.6%	3,285	2,525	130.1%
South Australian Institute of Technology (Adelaide)	73,900	121,633	60.8%	885	1,356	65.3%
Torrens College of Advanced Education	77,158	109,500	70.5%	1,835	1,865	98.4%
Western Australian Institute of Technology	154,387	219,100	70.5%	6,132	4,037	151.9%
Tasmanian College of Advanced Education	124,675	103,067	121.0%	3,270	1,128	289.9%
Canberra College of Advanced Education	119,758	134,500	89.0%	3,328	2,380	139.8%
Median	63,301	96,240	60.4%	1,476	944	133.1%

* See Note on page 33.

TABLE 12

COMPARISON OF 1975 MONOGRAPH HOLDINGS AND CURRENT SERIAL SUBSCRIPTIONS WITH 'WARK' STANDARDS

(b) EX-TEACHERS COLLEGES

Present Name of College	Total Monograph Volumes 1975	'WARK' Standard* (Volumes)	% of Standard	Current Serial Subscriptions 1975	'WARK' Standard* (Periodical Titles)	% of Standard
Alexander Mackie College of Advanced Education	42,774**	53,300	80.3%	512**	255	200.8%
Armidale College of Advanced Education	57,597**	82,775	69.6%	685**	621	110.3%
Goulburn College of Advanced Education	39,774	63,950	62.2%	399	433	92.1%
Nepean College of Advanced Education	40,392	49,000	82.4%	900	200	450.0%
Newcastle College of Advanced Education	60,187	98,940	60.8%	753	984	76.5%
Northern Rivers College of Advanced Education	25,800	43,750	59.0%	574	200	287.0%
Sydney Kindergarten Teachers College	39,607	37,667	105.2%	201	200	100.5%
Sydney Teachers College	139,864	111,967	124.9%	1,742	1,479	117.8%
Wollongong Institute of Education	43,238	79,025	54.7%	635	684	92.8%
State College of Victoria - Ballarat	33,016**	50,750	65.1%	418**	213	196.2%
State College of Victoria - Bendigo	26,430	39,400	67.1%	540	440	122.7%
State College of Victoria - Burwood	64,849	87,260	74.3%	629	809	77.8%
State College of Victoria - Coburg	39,954	81,020	49.3%	887	753	117.8%
State College of Victoria - Frankston	44,790	81,020	55.2%	364	753	48.3%
State College of Victoria - Geelong	33,727	55,850	60.4%	510	298	171.1%
State College of Victoria - Hawthorn	30,120	85,800	35.1%	559	787	71.0%
Melbourne State College	101,847	155,720	65.4%	1,548	3,086	50.2%
State College of Victoria - Rusden	56,405	99,000	57.5%	1,040	985	105.6%
State College of Victoria - Toorak	44,304	83,920	52.8%	800	759	105.4%
Brisbane Kindergarten Teachers College	19,400**	45,292	42.8%	144**	200	72.0%
Kelvin Grove College of Advanced Education	55,093**	89,940	61.3%	452**	849	53.2%
Mount Gravatt College of Advanced Education	53,144	89,780	59.2%	1,199	847	141.6%
North Brisbane College of Advanced Education	33,915	77,900	43.5%	905	665	136.1%
Townsville College of Advanced Education	27,339	46,958	58.2%	922	200	461.0%
Adelaide College of Advanced Education	68,050	88,980	76.5%	1,094	835	131.0%
Murray Park College of Advanced Education	63,816	85,060	75.0%	940	776	121.1%
Salisbury College of Advanced Education	34,711	69,800	49.7%	1,230	530	232.1%
Sturt College of Advanced Education	56,164	80,780	69.5%	1,359	712	190.9%
Churchlands Teachers College	29,250	82,160	35.6%	733	732	100.1%
Claremont Teachers College	37,624	67,100	56.1%	542	485	111.8%
Graylands Teachers College	23,993**	45,333	52.9%	275**	200	137.5%
Mount Lawley Teachers College	36,374	81,320	44.7%	635	720	88.2%
Western Australian Secondary Teachers College	33,544**	84,000	39.9%	1,255**	760	165.1%
Median	39,954	81,020	60.4%	685	712	117.8%

TABLE 13

COMPARISON OF 1975 MONOGRAPH HOLDINGS AND CURRENT SERIAL SUBSCRIPTIONS WITH 'WARK' STANDARDS

(c) OTHER MONOVOCATIONAL COLLEGES

Present Name of College	Total Monograph Volumes 1975	'WARK' Standard* (Volumes)	% of Standard	Current Serial Subscriptions 1975	'WARK' Standard (Periodical Titles)	% of Standard
Cumberland College of Health Sciences	23,907	33,160	72.1%	811	?	-
Hawkesbury Agricultural College	19,857	21,200	93.7%	710	200	355.0%
Orange Agricultural College	5,358	8,150	65.7%	501	163	307.4%
College of Nursing, Australia	10,376	10,350	100.3%	202	?	-
Dookie Agricultural College	6,850	9,800	69.9%	186	196	94.9%
Emily McPherson College	28,375	18,360	154.5%	168	?	-
Lincoln Institute	15,434	16,500	93.5%	349	?	-
Victorian College of the Arts	5,861	11,625	50.4%	210	165	127.3%
Victorian School of Forestry	5,766	6,950	83.0%	N.A.	139	-
Queensland Agricultural College	18,062**	16,375	110.3%	657**	200	328.5%
Roseworthy Agricultural College	5,973	8,250	72.4%	594	165	360.0%
Median	10,376	11,625	83.0%	425	-	-

* See Note on page 33.

** 1974 Statistics

initiate a higher proportion of orders for non-book materials than for which they have been accustomed with print materials.

Overall it is difficult to draw any substantial conclusions from the statistics relating to the growth of non-book holdings, except that it is clear that many colleges are still in the early stages of development of such collections, that in very few colleges do such collections yet form more than a small proportion of total library holdings, and that it is unlikely that the provision of non-book materials has yet had a major impact on the study patterns of individual students in most colleges.

Trends in Collection Usage

Table 14 illustrates the growth in circulation of books in several colleges, for which detailed statistics were available over the period 1969-1974. The statistics quoted have been adjusted on the basis of information supplied by college librarians, to allow for differences in reporting practice and different loan regulations. Per capita circulation was computed using the Commission's recommendation of 1 part-time student = ½ full-time student, and 1 external student = ½ full-time student. Only tertiary student numbers have been included, and part-time academic staff numbers have been ignored, since it proved impossible to obtain accurate estimates of their full-time equivalence, because of variations in practice from college to college. The figures shown are considered to be the best estimate of total monograph borrowings, excluding serials, non-book materials, reserve and inter-library loans, but including renewals, and are considered to be a better comparative source than any existing published raw data. Nevertheless, it must be recognised that the adjustments made, which were applied on the basis of actual figures from C.A.E. libraries, and on the basis of statistics relating to the effect of loan periods and renewal rates published elsewhere (notably by Buckland[5] and Burkhalter[6]), may not be appropriate for every college, and extreme caution should be observed in drawing conclusions from statistics for any particular college. The data is considered to be more accurate for the years 1973

TABLE 14

TRENDS IN GENERAL CIRCULATION OF MONOGRAPHS, 1969-1974

	Total Monograph Volumes Circulated (Volumes-Adjusted)					Monograph Volumes Circulated Per Capita (E.F.T. Tertiary)				
	1969	1971	1972	1973	1974	1969	1971	1972	1973	1974
GROUP 1 (MULTIDISCIPLINARY METROPOLITAN COLLEGES)										
Canberra College of Advanced Education	3,410	19,859	34,997	43,234	59,936	16.7	13.2	20.7	20.7	23.1
Caulfield Institute of Technology	22,093	39,369	45,183	55,531	101,270	10.4	19.4	16.8	21.7	35.4
Footscray Institute of Technology	N.A.	55,120	N.A.	54,330	56,293	N.A.	50.4	N.A.	45.2	40.7
New South Wales Institute of Technology	N.A.	N.A.	N.A.	N.A.	50,201	N.A.	N.A.	N.A.	N.A.	15.0
Prahran College of Advanced Education	N.A.	N.A.	30,080	N.A.	30,249	N.A.	N.A.	38.0	N.A.	35.5
Preston Institute of Technology	N.A.	18,209	17,321	20,988	25,958	N.A.	22.2	17.9	20.4	21.9
Queensland Institute of Technology	10,131	25,632	26,907	26,639	35,723	5.7	11.0	10.9	8.9	12.6
Royal Melbourne Institute of Technology	80,960	102,350	108,785	127,648	180,630	12.1	15.4	15.9	17.0	24.0
South Australian Institute of Technology (Adelaide)	39,435	66,370	68,422	67,334	72,388	14.6	24.4	23.9	24.1	24.6
Swinburne College of Technology	38,561	73,905	97,618	110,587	129,325	12.6	26.6	32.6	34.0	39.4
Tasmanian College of Advanced Education	N.A.	68,200	N.A.	78,706	94,483	N.A.	58.6	N.A.	41.5	44.5
Torrens College of Advanced Education	N.A.	N.A.	N.A.	80,619	92,319	N.A.	N.A.	N.A.	36.7	45.3
Western Australian Institute of Technology	N.A.	51,892	54,491	78,616	99,577	N.A.	11.4	10.6	13.2	14.4
Median for colleges appearing each year						12.4	17.4	19.8	21.2	24.3
Median for all colleges						12.4	20.8	17.9	21.7	24.6
GROUP 2 (MULTIDISCIPLINARY COUNTRY COLLEGES)										
Ballarat College of Advanced Education	19,499	30,417	37,661	35,766	31,741	42.6	30.5	33.7	31.3	39.9
Bendigo College of Advanced Education	9,500	17,435	19,334	23,518	24,664	18.4	23.4	25.0	26.2	27.7
Capricornia Institute of Advanced Education	N.A.	7,849	N.A.	41,330	49,632	N.A.	29.5	N.A.	63.2	49.8
Darling Downs Institute of Advanced Education	9,024	11,686	13,175	17,385	32,337	26.2	25.9	13.2	17.5	23.2
Gippsland Institute of Advanced Education	N.A.	N.A.	N.A.	12,137	19,378	N.A.	N.A.	N.A.	26.7	26.9
Gordon Institute of Technology	17,993	37,455	53,478	62,789	52,450	18.3	15.8	20.8	25.9	40.5
Mitchell College of Advanced Education	N.A.	14,127	22,466	24,387	44,040	N.A.	16.3	18.1	19.5	24.7
Riverina College of Advanced Education	N.A.	N.A.	N.A.	35,815	42,956	N.A.	N.A.	N.A.	34.3	31.4
South Australian Institute of Technology (Whyalla)	N.A.	3,709	5,650	5,110	8,110	N.A.	33.7	47.5	45.2	54.1
Warrnambool Institute of Advanced Education	N.A.	N.A.	N.A.	18,540	21,870	N.A.	N.A.	N.A.	48.2	40.7
Median for colleges appearing each year						22.3	24.7	22.9	26.0	33.8
Median for all colleges						22.3	25.9	22.9	29.0	35.7

onwards when more detailed checks on procedures could be applied. (The exact calculations applied to arrive at the 'adjusted' circulation figure for each library are described in detail at the beginning of Appendix 7 in Volume 2, which contains the full data subjected to analysis.)

The figures show the expected increase in total library use as expressed in total circulation. More importantly, they indicate rising per capita circulation from libraries, showing that the increase in library use in C.A.E.'s is not due simply to the increase in student and staff numbers. The factors which tend to increase library use are discussed in detail in our literature review in Volume 2, pages 46-65, and do not need to be repeated here. The important fact is that overall library use is increasing, probably as a result of a combination of many factors, and that this must, other things being equal, tend to decrease the availability of materials in collections, unless the collections continue to grow at a faster rate than total circulation.

It is reasonable to speculate whether further rises in per capita circulation, which must affect collection adequacy, can be expected. Table 15 illustrates the 1975 statistics for general circulation (i.e. excluding reserve loans) from Australian university libraries. The figures have not been adjusted for the factors mentioned above and are not strictly comparable with those in Table 14, but they do indicate that Australian universities libraries generally have a higher per capita usage than C.A.E. libraries, although not much higher, on average, than in country colleges. It seems possible that as C.A.E. collections become stronger, and less reliance is placed on other libraries in metropolitan areas, per capita circulation will tend to rise to a figure closer to that experienced by universities, although university library circulation itself has been tending to rise slowly on a per capita basis, and some differences may remain indefinitely because of the relatively large commitment of universities to research involving library use.

TABLE 15

GENERAL PER CAPITA CIRCULATION FROM AUSTRALIAN UNIVERSITY LIBRARIES, 1975

Name of University	Circulation Per Capita (EFT)
Macquarie University	70.4
University of Queensland	48.8
James Cook University	45.2
Australian National University	44.4
University of Sydney	42.0
Flinders University	37.2
University of Newcastle	35.6
Monash University	34.4
University of Wollongong	33.1
University of Adelaide	31.4
University of Western Australia	29.5
University of Melbourne	28.1
University of Tasmania	27.4
University of New South Wales	26.0
La Trobe University	21.1
University of New England	13.8
Median	33.8

Correlation and Regression Analysis of Statistics

Further information on possible factors relating to library use in C.A.E. libraries was sought by conducting correlation and regression analyses based on the published statistics relating to C.A.E. libraries.

(1) Pilot Study

A pilot study was initially undertaken using the raw data in the 1971, 1972 and 1973 C.A.E. library statistics published in '*Australian Academic and Research Libraries*', relating to:-

(a) Number of items lent (i.e. circulated) from each library
(b) Teaching staff and student numbers in each college
(c) Monograph volumes in each library

(d) Annual monograph acquisitions by each library
(e) Seating capacity of each library.

The aim of the pilot study was to investigate the possiblity that the increasing provision of library materials in C.A.E. libraries could be linked directly to increases in use of that material as expressed by circulation statistics, i.e. could it be shown directly that the substantial funds invested in C.A.E. library collections in recent years was resulting in greater per capita library use by students and staff?

Correlations of lending from each library were then drawn with each of the other four variables listed, on a per capita (using both total and E.F.T. population served) and absolute basis. It was not expected that, using raw data, high correlations would result, but that some indicative correlations for further study might result.

The pilot study suggested:-

(a) That total circulation was highly positively correlated with total population served (+0.80 for all colleges listed).

(b) That per capita circulation was negatively correlated with total population served (-0.50 for all colleges listed).

(c) That circulation, annual acquisition, monograph holdings and seating available were all positively inter-correlated on a per capita basis, i.e. small colleges had relatively high per capita use and provision of all variables, while larger colleges tended to have lower per capita use and provision of each factor.

(d) As a result of a step-wise regression study, with per capita circulation as the dependent variable and all other variables mentioned as independent variables, only annual acquisition could be regarded as being a significant variable ($R^2 = 66.6\%$) in "explaining" the variation in per capita circulation.

(2) Full Analysis

As a result of the pilot study, it was considered that the findings warranted further investigation, using more reliable and comparable data relating to college libraries and collection provision. Circulation data from colleges was adjusted on the basis described in Appendix 7, some individual anomalies were corrected, and the resulting statistics for 1973 and 1974 were subjected to a similar correlation and regression analysis to that described in the pilot study. The full statistics subjected to analysis are tabled in Appendix 7. Both the pilot and full analyses were carried out using the Statistical Package for the Social Sciences (S.P.S.S.) set of computer programs.

As Appendix 7 shows, the data was analysed for all colleges as a single group, and for each of four groups of the colleges:-

(a) Metropolitan multidisciplinary colleges.
(b) Country multidisciplinary colleges.
(c) Metropolitan monovocational colleges.
(d) Country monovocational colleges.

The findings of the full statistical analysis were as follows:-

(a) Total Circulation and Population Served

There was a high positive correlation between total number of items circulated from a library and total population served, whether raw or 'adjusted' circulation statistics were used, and whether total number or equivalent full-time (E.F.T.) numbers were used as the measure of population. However, as Table 16 shows, a higher correlation was achieved for all colleges (and for correlations for each of the 4 group of colleges), using adjusted circulation. This provides some support for the adjustments made. Also higher correlations resulted from the use of E.F.T. numbers than with total numbers, suggesting that library circulation is in practice more closely linked to E.F.T. numbers than overall numbers of students and staff. However, the variations are relatively small.

TABLE 16

CORRELATION COEFFICIENTS FOR ANNUAL LIBRARY CIRCULATION WITH POPULATION OF COLLEGES

	Correlation With Total Population of Colleges	Correlation With E.F.T. Population of Colleges
'Raw' Circulation	+0.69	+0.75
'Adjusted' Circulation	+0.76	+0.80

Using a step-wise regression technique with adjusted circulation as the dependent variable and annual monograph acquisition, total monograph holdings, available seating in the library and E.F.T. population as independent variables, only E.F.T. population was a significant variable ($R^2 = 63.6\%$). This confirms, as one would expect, that the amount of borrowing from a college library is linked closely to the number of college members the library serves.

(b) Per Capita Circulation and Population Served

When per capita (E.F.T.) circulation was correlated with E.F.T. population served, there was a negative correlation. However, as Table 17 shows, the overall correlation was not large. Also when the correlations were studied separately for each group of colleges, the correlation for monovocational country colleges (Group 4) was in fact positive. This may be because these country colleges all have relatively small populations, and it may be that per capita circulation becomes smaller only after colleges reach a certain critical size, and most of the large colleges are situated in metropolitan areas. It was also the case that two of the three smallest country monovocational colleges were agricultural colleges, which may have been distinctly different from the other colleges in the group, which were all ex-teachers colleges. There were

TABLE 17

CORRELATIONS BETWEEN ANNUAL PER CAPITA (E.F.T.) CIRCULATION AND SEVERAL VARIABLES FOR METROPOLITAN AND COUNTRY, MULTIDISCIPLINARY AND MONOVOCATIONAL COLLEGES

	Correlation with Annual Per Capita (E.F.T.) Circulation				
	All Colleges	Metropolitan Multidisciplinary Colleges	Country Multidisciplinary Colleges	Metropolitan Monovocational Colleges	Country Monovocational Colleges
Population Served (E.F.T.)	-0.37	-0.48	-0.64	-0.24	+0.19
Annual Acquisitions Per Capita (E.F.T.) in 1973 and 1974	+0.46	+0.66	+0.29	+0.42	+0.57
Monograph Volumes Per Capita held at end of 1973 and 1974	+0.38	+0.70	+0.40	+0.11	+0.20
Seating in Library Available Per Capita in 1973 and 1974	+0.19	+0.40	+0.02	-0.08	+0.33
Number of Colleges Providing Data	59	13	10	26	10

few colleges in Group 2 and 4, so that not enough data was available for reliable conclusions to be drawn for those groups. Table 17 indicates the dangers of drawing conclusions based only on the overall data. Nevertheless, we regard the overall finding of some significance, and worth possible further investigation, since it may have implications for the quality of education to be achieved in very large colleges.

(c) Per Capita Circulation and Library Variables

When per capita (E.F.T.) circulation was correlated with per capita annual monograph acquisitions, total mongraph stock and library seating available, positive correlations existed, both for C.A.E.'s as a whole and for each of the four college groups, as shown in Table 17. The existence of positive correlations between per capita circulation and seating available per capita is a little surprising. It had been hypothesised that there might be a negative correlation between the two variables - on the grounds that where a library is relatively short of seating space, readers will be more likely to borrow than to study items within the library. However, it may be that those libraries with a greater amount of seating available per reader are newer, have better displays of their collection, and are possibly more attractive, so that readers are encouraged to visit and use them more often, resulting in higher per capita use both within the library and for borrowing.

The positive correlations with both per capita annual acquisitions and per capita monograph stock held do suggest that the provision of a greater per capita availability of material, particularly newly acquired material, may indeed lead to a greater usage of the college library by members of the college. However the correlations, though consistently positive, are not high, and we cannot conclude conclusively that this is the case. A step-wise regression study revealed that no single one of the 'independent' variables of per capita annual acquisition, per capita monograph stock held or per capita seating available could be regarded as significant in 'explaining' the variations in per capita circulation from college to college, as all the variables were highly intercorrelated.

(d) Per Capita Circulation and College Location

When per capita (E.F.T.) circulation in metropolitan multidisciplinary colleges was compared with that in country multidisciplinary colleges (i.e. Group 1 against Group 2), country college libraries were found to have a significantly higher mean per capita circulation than metropolitan college libraries (with 98% confidence). However, when country and metropolitan monovocational colleges were compared with each other, the reverse was the case. Overall, no differences in the means for all colleges were observable (i.e. Groups 1 and 3 against Groups 2 and 4), indicating that the differences are maybe due to the fact that metropolitan multidisciplinary college libraries on average serve larger numbers than equivalent country college libraries, and as we have indicated above there is a negative correlation between per capita circulation and population served. The course composition of the two 'monovocational' groups of colleges was also different, which may help to explain the reverse situation for these groups (e.g. 20% of the country colleges included were agricultural colleges).

Table 18 indicates the mean adjusted per capita (E.F.T.) circulation in each group of colleges.

(e) Per Capita Circulation and Discipline Range

When per capita (E.F.T.) circulation in multidisciplinary college libraries was compared with that in monovocational college libraries there was a significantly higher rate of per capita circulation from the latter group (with over 99% confidence), as can be seen by the comparison of the means in Table 18.

TABLE 18

MEAN ADJUSTED PER CAPITA (E.F.T.) CIRCULATION FOR METROPOLITAN AND COUNTRY, MULTIDISCIPLINARY AND MONOVOCATIONAL COLLEGES

<table>
<tr><th colspan="4">Mean Adjusted Annual Per Capita (E.F.T.) Circulation</th></tr>
<tr><th>Metropolitan Multidisciplinary Colleges</th><th>Country Multidisciplinary Colleges</th><th>Metropolitan Monovocational Colleges</th><th>Country Monovocational Colleges</th></tr>
<tr><td>23.8</td><td>29.2</td><td>40.3</td><td>34.2</td></tr>
<tr><td colspan="2">Multidisciplinary Colleges</td><td colspan="2">Monovocational Colleges</td></tr>
<tr><td colspan="2">26.1</td><td colspan="2">38.9</td></tr>
<tr><td colspan="2">Metropolitan Colleges</td><td colspan="2">Country Colleges</td></tr>
<tr><td colspan="2">32.7</td><td colspan="2">30.7</td></tr>
</table>

Conclusions

The statistical data analysed suggests:-

(1) That there is no significant difference between metropolitan colleges and country colleges in per capita circulation from the library. This suggests that any differences in the relative adequacy of collections in metropolitan and country colleges is not affecting the individual amount of borrowing from such collections in each type of institution. This is surprising, since observation of the situation in country college libraries, and the results of tests described in Chapters 4, 5 and 8, suggest that collections in country college libraries are weaker in most subject areas than the corresponding collections in the larger metropolitan colleges. However, as Chapter 8 indicates, the lack of alternative library resources in country areas means that virtually all library use is concentrated on the college library,

while in metropolitan colleges users also make use of other libraries so that college library circulation in a smaller proportion of total library use. Chapter 8 also suggests that the ratio of circulation to 'within library' use may be higher in country colleges than in metropolitan colleges, though the evidence is not strong.

(2) There is a significantly higher rate of per capita circulation from the library in teachers and other monovocational colleges, than there is from multidisciplinary college libraries. This may be because of special features of the course range of monovocational colleges, most of which are concerned with teacher education, or because monovocational colleges are generally smaller than multidisciplinary colleges, and may be able to more easily pursue teaching methodologies which involve greater use of library materials.

(3) The main factor affecting *total* circulation from a C.A.E. library is the number of students and staff that it serves. *The higher correlations with Equivalent Full-Time (E.F.T.) numbers served than with total numbers served suggests that in practice the former may be superior in predicting library use*. However, as colleges becomes larger there is some evidence to suggest that *per capita* circulation becomes lower. It would be speculative to suggest reasons for this phenomenon, but since most college library use studies suggest that use is dependent primarily on teaching methods, it is possible that library-based teaching methods may be used more often in smaller colleges, possibly because such methods are less practicable with larger student numbers.

(4) There is *some* evidence that the provision of a larger volume of monographs in a C.A.E. library collection for each member served by the library may increase the per capita use of the library. However, it is not possible to say definitely that this is the case, and, though such a hypothesis is held as a tenet by many librarians, there is no conclusive evidence from this

study, nor, to our knowledge, from the results of any other study. Our results provide only tentative support for the conclusions of Waples[7] and Beckman[8] that there is a positive correlation between per capita circulation and annual acquisition of monographs.

Overall, the results of this statistical exercise must be regarded as disappointing, particularly after the promising results of the pilot study. It appears that the difficulties of obtaining reliably comparable circulation data from college libraries, and the many local factors which affect the volume of circulation from any particular library, make it impossible at present for us to prove that the provision of a larger and more up to date college library collection necessarily encourages greater use of that library. We believe this to be so, and we believe that individualised teaching and learning methods are difficult and even impossible without the availability of substantial library resources, but quantitative evidence for this remains inconclusive, and the matter is still largely one of faith. Nevertheless, we conclude that if considerably more attention were to be given to the adequate collection of statistical data relating to C.A.E. libraries, with proper definition of terms so that individual libraries were able to ensure a greater degree of comparability, then it is likely that over a period, some quantitative measurement of the effects of greater library collection provision will be achieved. The recommendations that follow are directed towards this end.

Recommendations

The major conclusion from this statistical study is that it is virtually impossible at present to make meaningful comparisons of library use and collection adequacy in colleges. Greater attention must be given to clearer definitions of the composition of various statistics, and the statistics collected should enable college by college comparisons to be made regardless of the processing and loan systems operated. At the same time we recognize that statistical collection should not add appreciably to staff duties, and that systems in some libraries do not permit some potentially useful statistics to be collected without considerable efforts. Therefore a reporting system must be adopted that allows a basic minimum of reporting by all libraries, and yet enables libraries, with the necessary capability, to provide a wider range of statistics.

Accordingly, we recommend that beginning with the library statistics for the year 1977 (thus allowing all colleges to prepare any necessary changes before the start of 1977) all C.A.E. libraries should report statistics of the following defined library activities to both the Commission on Advanced Education, and the person responsible for compilation of the C.A.E. library statistics in '*Australian Academic and Research Libraries*'.

The categories listed may seem too detailed, but in fact the great majority are already reported either to the Commission or for publication in '*Australian Academic and Research Libraries*'. They represent something of a compromise between the statistics desirable to allow full comparison of libraries in any particular year, or any one library from year to year, and the amount of data it is reasonable to expect library administrations to collect. We believe that if the recommendations are followed the future monitoring of C.A.E. library progress by the Commission and by college and library administrators, will be greatly facilitated, and will also assist future investigators of various aspects of collection development.

RECOMMENDATION 1. That, in order to permit meaningful comparisons of progress and performance in C.A.E. libraries to be made, the following statistics be collected and reported by the Chief Librarians of all Colleges of Advanced Education, to the Commission on Advanced Education and for selective publication in the journal '*Australian Academic and Research Libraries*', and that the collected statistics be distributed to all C.A.E. Chief Librarians.

1. Total Collection Resources (as at 31st December each year)

All categories of collection resources are to be taken to include only materials which have been catalogued and/or otherwise fully prepared and made available for use by readers. The terminology used is defined following Recommendation 2.

1.1 Monographs

To include both print and microform editions.

1.1.1 Total monograph titles

1.1.2 Total monograph volumes

1.2 Serials

To include both print and microform editions, whether subscribed to currently or not. Duplicates of current titles to be recorded only at 1.2.9.

1.2.1 Total current periodical titles

1.2.2 Total current other serial titles

1.2.3 Total current serial titles (1.2.1 plus 1.2.2)

1.2.4 Total periodical bibliographic volumes

1.2.5 Total other serial bibliographic volumes

1.2.6 Total serial bibliographic volumes (1.2.4 plus 1.2.5)

1.2.7 Total current serial titles received by subscription

1.2.8 Total current serial titles received by gift/exchange

1.2.9 Total duplicate current serial titles received

1.3 Microforms

Statistics of microform editions of works are to be included at the appropriate place in Sections 1.1, 1.2 and 1.4, and are recorded separately here only as a useful guide, i.e. they are not additive to the statistics in Sections 1.1, 1.2 and 1.4.

1.3.1 Total monograph volumes in microform

1.3.2 Total serial bibliographic volumes in microform

1.3.3 Total non-book items in microform

1.4 Non-book Materials

To include all items not described as monographs (1.1) or serials (1.2).

1.4.1 Total audio-recordings

1.4.2 Total slides (individual)

1.4.3 Total transparencies (individual)

1.4.4 Total filmstrips

1.4.5 Total 16 mm films

1.4.6 Total 8 mm films

1.4.7 Total video recordings

1.4.8 Total maps, in print or microform

1.4.9 Total other flat graphic materials, in print or microform

1.4.10 Total kits and games

1.4.11 Total music scores and sheet music*

1.4.12 Total other non-book materials

2. Annual Changes to Collection Resources (1st January to 31st December inclusive each year)

2.1 Monographs

To include both print and microform editions.

2.1.1 Total new monograph titles added

2.1.2 Monograph volumes added by purchase

2.1.3 Monograph volumes added by gift or exchange

2.1.4 Total monograph volumes added (2.1.2 plus 2.1.3)

2.1.5 Total monograph volumes withdrawn from collection

2.1.6 Net increase/decrease of monograph volumes (2.1.4 minus 2.1.5)

2.2 Serials

To include both print and microform editions. New duplicate titles received to be recorded only at 2.2.6.

2.2.1 New serial titles received by subscription (i.e. first issue received during year)

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* *Note*: See page 70.

2.2.2 New serial titles received by gift/exchange (i.e. first issue received during year)

2.2.3 Total new serial titles received (2.2.1 plus 2.2.2)

2.2.4 Total serial titles cancelled/no longer received

2.2.5 New increase/decrease in current serial titles received (2.2.3 minus 2.2.4)

2.2.6 New duplicates of serial titles received

2.2.7 Total serial bibliographic volumes added

2.2.8 Total serial bibliographic volumes withdrawn

2.2.9 Net increase/decrease in serial bibliographic volumes (2.2.7 minus 2.2.8)

2.3 Microforms

Statistics of microform editions of works are to be included at the appropriate place in Sections 2.1, 2.2 and 2.4, and are recorded separately here only as a useful guide, i.e. they are not additive to the statistics in Sections 2.1, 2.2 and 2.4.

2.3.1 Monograph volumes in microform added

2.3.2 Serial bibliographic volumes in microform added

2.3.3 Non-book microform items added

2.4 Non-book Materials

2.4.1 Audio-recordings added

2.4.2 Slides (individual) added

2.4.3 Transparencies added

2.4.4 Filmstrips added

2.4.5 16 mm films added

2.4.6 8 mm films added

2.4.7 Videotapes added

2.4.8 Maps (in print or microform) added

2.4.9 Other flat graphic materials (in print or microform) added

2.4.10 Kits and games added

2.4.11 Music scores and sheet music (in print or microform) added*

2.4.12 Other non-book materials added

3. Annual Loans (1st January to 31st December inclusive each year

3.1 General Collections Loans

3.1.1 Total loans from general collection, including renewals if these are permitted

3.1.2 Total loans from general collection, excluding renewals

3.1.3 Length of most common loan period[#] for items from general collection (without renewal)

3.1.4 Maximum number of items from general collection allowed on loan to undergraduate students at any one time

3.2 Reserve Collections Loans[#]

3.2.1 Total loans from reserve/short-loan collection, including renewals if these are allowed

3.2.2 Total loans from reserve/short-loan collection, excluding renewals

3.2.3 Length of most common loan period for items from reserve/short-loan collection (without renewal)

3.3 Non-Book Collections Loans[#]

Separate return to be included only where non-book materials are held as a collection separate from those in Sections 3.1 and 3.2. Statistics are additive to those in Sections 3.1 and 3.2.

3.3.1 Total non-reserve loans of non-book materials

3.4 Serial Items Loans[#]

Separate return to be included only where serial items are issued under different regulations from those for monographs or reserve items. Statistics are additive to those in Sections 3.1 and 3.2.

Notes: * See page 70 , and
# See page 66.

3.4.1 Total non-reserve loans of serial items (individual issues or bound volumes)

3.5 Total Postal Loans* to External Students

3.6 Inter-Library Loans*

3.6.1 Total loans to libraries other than branch libraries of the college

3.6.2 Total borrowings from libraries other than branch libraries of the college

3.7 Total Loans of All Kinds from Central Library

3.8 Total Loans of All Kinds from Branch Libraries

3.9 Total Loans of All Kinds (3.7 plus 3.8, also 3.1 plus 3.2 plus 3.3 plus 3.4 plus 3.5 plus 3.6)

4. College Population (as at 30th April each year)

4.1 Teaching Staff

4.1.1 Full-time

4.1.2 Part-time, calculated as full-time equivalent

4.2 Postgraduate Students

4.2.1 Full-time

4.2.2 Part-time

4.2.3 External

4.3 Tertiary Level Students

4.3.1 Full-time

4.3.2 Part-time

4.3.3 External

4.4 Non-Tertiary Level Students served by the college library (Exclude if these students have their own separate library facilities)

4.4.1 Full-time

4.4.2 Part-time

4.4.3 External

Note: * See page 67.

4.5 Total College Population, including non-academic staff, served by the college library

4.6 Non-members of College, registered as library users and having borrowing rights

In the reporting of all the above statistics, colleges should clearly distinguish in their answers between the case where a figure exists but is not available (N.A.) and a zero return (0). No category should be left blank, e.g. if a college has no external students the return for item 3.5 would be '0'. Where a statistic derives from an estimate rather than an actual count, the statistic should be appended with an asterisk, e.g. 274*.

RECOMMENDATION 2. That in reporting the statistics listed in Recommendation 1, the following definitions and guidelines be adopted by Chief Librarians of all Colleges of Advanced Education, in order to eliminate the misinterpretations in current statistical reporting.

Bibliographic Volume (1.2.4-1.2.6, 1.3.2, 2.2.7-2.2.9) In relation to serials, the volume designated by the publisher of the serial and given a distinguishing number. If no volume number is assigned to a serial, a 'bibliographic volume' is to be taken to comprise one calendar year's issue or issues of the serial.

Branch Libraries (3.8) are those which are physically separated from the central library but carry stocks financed from central library funds.

Current Title (1.2.1, 1.2.2, 1.2.3, 1.2.7, 1.2.8, 1.2.9, 2.2.5) A serial or periodical title to which the library has a continuing subscription, or has the expectation of receiving further issues by gift or exchange, as at the 31st December each year, and of which the first issue has been received and catalogued or otherwise prepared for use. Total current titles received should not be taken to include duplicate subscriptions of titles, which are to be recorded separately at 1.2.9 and 2.2.6).

Loan (3) A transaction recorded by the library, as a result of a user taking an item for potential use outside the library, or from a limited access area within the library, whose exit is monitored by library staff. It is recognised that many libraries will be unable to give separate statistics of loan renewals, reserve-collection loans, serial items loans, or non-book media loans. Where these categories are included in the General Collection Loan figures (3.1.1, 3.1.2), this should be clearly indicated as a footnote to the returns.

Most Common Loan Period (3.1.3, 3.2.3) is to be taken as the allowable loan period for which the greatest number of items from the collection concerned were issued to readers, whether or not the readers actually kept the items until the return date. Those libraries that operate a fixed date of return loan system (e.g. 'by the end of semester' or 'by last Friday in each month') should estimate their loan period as the average time allowed, being half the average period between successive return dates, excluding vacation periods.

Non-Book Collections Loans (3.3) Loans should be recorded separately only where such materials are not integrated with either the general collection or the reserve collection, and are issued under different loan conditions. Loans of non-book materials should be included in general collection or reserve collection statistics if such materials are issued under the same conditions as other items in those collections, and a 'zero' return should then be entered for non-book collections loans.

Serial Items Loans (3.4) Loans should be recorded separately, if such items may be borrowed, unless serial items are issued under the same loan conditions as other items in the general collection, or the reserve collection. In this case the loans should be included in the statistics for those collections, and a 'zero' return entered for Serial Items Loans. In all cases libraries should state whether loan of serial items is included.

Postal Loans (3.5) to external students should be recorded separately from other loan statistics, if possible. They should not be included both in Category 3.5 and other categories. Loans to 'external students', from the general collections or from an external collection, issued on a personal basis within the library, should be included in the general collections loans category.

Inter-Library Loans (3.6) should include physical items actually loaned, and photocopied bibliographic items (not sheets) supplied or received in lieu of loan. Loans from one branch of the college library system to another should not be included in 3.6.

Microform (1.3, 2.3) Any library material which has been photographically reduced in size, and which must be read with the help of an enlarging machine. It includes microfilm, microfiche, aperture cards, and various forms of micro-opaques. The number of microforms held is to be counted as if the material was in its original printed format, whether monograph volumes, serial bibliographic volumes, or non-book media.

Monograph (1.1, 2.1) A unit of publication, either bibliographically independent or a volume in a completing series published under the same title, consisting of printed leaves, sheets or signatures sewn or otherwise bound together, covered or uncovered. Includes separately catalogued pamphlets. Bound volumes of serials are not to be counted as monographs, nor are any items designated as non-book materials.

New Title (2.1.1, 2.2.1, 2.2.2., 2.2.3) The first copy of that title in that edition held by the library, whether held in book, periodical or microform. A new serial title is the first issue of a serial which is catalogued. Where two or more copies of the same new book or serial are received, this should be counted as one new title only. Change of title of a serial does not affect the number of titles, except that if a single serial title received then commences to appear in more than one series with distinct designations (e.g. Part A, Part B) each series other than the first should be treated as a new title. Purchase of discontinued serials in bound forms should not be shown as new titles and these are to be treated as additions to holdings of serial bibliographic volumes. A new microform title should only be counted if the title is not already held in a book or periodical form.

Non-Book Materials (1.4, 2.4) Library materials other than printed or microform monographs and serials, and consisting of materials requiring equipment for visual projection and/or sound replay, graphic materials, three-dimensional materials, and combinations of the above.

In a number of colleges, the administration of collections of non-book media is separate from that of the library, which controls access to printed materials only. In these colleges it is essential that all statistics relating to holdings, additions, and loans of non-book media should comprise total returns both from the college library and any separate 'Instructional Materials', 'Media', or 'Learning Resources' Centre which collects and provides access to non-printed materials.

For counting purposes, each physical item should be counted as one unit, except that all items forming part of a kit or game should be counted as one unit. For the purposes of counting individual types of non-book media, the following guidelines should be followed.

Audio-Recordings (1.4.1, 2.4.1) to include all recordings of sound, in the forms of cylinders, phonodiscs (records), magnetic tape reels, cartridges, cassettes, and magnetic wire recordings.

Slides (1.4.2, 2.4.2) to include small units of film transparencies mounted in a rigid frame, usually 5 cm x 5 cm (2" x 2"), and designed for use in a slide viewer or slide projector. Slides within a set should be counted individually, unless they form part of a kit (1.4.10 and 2.4.10).

Transparencies (1.4.3, 2.4.3) to include sheets of transparent material designed for use with an overhead projector. Transparencies within a set should be counted individually.

Filmstrips (1.4.4, 2.4.4) to include lengths of film of any size (usually 35 mm width), containing a series of images designed for viewing in sequence one at a time. Count each continuous strip as one unit.

16 mm Films (1.4.5, 2.4.5) to include both silent and sound films in a 16 mm format, bearing a sequence of images which create the illusion of motion when projected. Count individual reels of films each as one unit.

8 mm Films (1.4.6, 2.4.6) to include both silent and sound films in 'standard - 8 mm' or 'super - 8 mm' format, in the form of open reels, cartridges, or film loops, bearing a sequence of images which create the illusion of motion when projected. Count individual reels, cartridges, cassettes or loops each as one unit.

Video Recordings (1.4.7, 2.4.7) to include recordings carrying a series of television visual images (with or without sound accompaniment), in the form of video-tape reels, video-cassettes, video-discs and other electronic or holographic visual storage devices. Count each physical unit as one unit.

Maps (1.4.8, 2.4.8) to include flat representations of all or parts of the earth or other areas of the universe. These may be in either full-size printed format or microform (usually aperture cards). Count individual sheets or microform sheet-equivalents. Do not count maps contained within atlases or other monographs, or three-dimensional maps.

Flat Graphic Materials (1.4.9, 2.4.9) to include all flat pictorial representations other than maps, in print or microform (not slides). Include charts, wallcharts, flipcharts, flash cards, study prints, art prints, drawings, photographs, and paintings. Count each physical unit as one unit.

Kits and Games (1.4.10, 2.4.10) to include combinations of items in two or more media designed to be used together, and boxed sets of material designed for educational play or simulation. Count each combination as one unit.

Music Scores and Sheet Music (1.4.11, 2.4.11) to be recorded as a separate category only by libraries with a substantial collection of such material, shelved separately. In most libraries such material would be expected to be included in the monograph collection and to be included in the monograph statistics. Count each physical unit, whether bound or unbound, as one unit.

Other Non-Book Materials (1.4.12, 2.4.12) to include all non-book items not defined above, including programmed instructional materials not included in other categories, globes, relief maps and other three-dimensional representations and models, dioramas and realia (actual objects or specimens). Count each physical unit as one unit.

Periodical (1.2.1, 1.2.4) A serial publication which constitutes a continuous series under the same title, usually published at regular intervals over an indefinite period, individual issues in the series being numbered consecutively, or each issue being dated. The following categories of serial should not be counted as periodicals - annual or less frequently published handbooks, calendars and prospectuses of educational and other institutions; annual or less frequently published regular reports of industrial companies, government bodies and other organizations; yearbooks, annual almanacs, and annual directories, including telephone directories; loose-leaf and card-form serial services; monographic and publishers series. Periodicals include newspapers and may be in either print or microform.

Population (4) Categories as defined in statistical returns from colleges to the Commission on Advanced Education.

Equivalent Full-Time (E.F.T.) Student numbers are to be calculated on the basis of 1 part-time student = ½ full-time student, and 1 external student = ½ full-time student.

Part-Time Teaching Staff to be counted as full-time equivalent because of the very different part-time staffing policies operated from college to college. Full-Time Equivalent (F.T.E.) Teaching Staff numbers are to be calculated according to the returns provided by each college, or on any standard basis to be formulated by the Commission on Advanced Education, equating the total teaching effort by all staff in terms of the normal academic load of a full-time member of staff.

Postgraduate Students include only students on Postgraduate Diploma* or Masters courses which usually require an undergraduate or postgraduate qualification in the same broad subject area as a condition of entry, i.e. not students on 'graduate diploma' courses which provide education in a field different to the students' undergraduate major study area, and are offered at essentially undergraduate level, with no special undergraduate prerequisites for entry.

Serial (1.2, 2.2) A publication issued in successive parts, usually at regular intervals and as a rule, intended to be continued indefinitely. Serials include periodicals and newspapers, annual reports, yearbooks, including prospectuses, calendars and handbooks of educational institutions, serial loose-leaf or card services, and may include monographic and publishers series. Monographic and publishers series are to be counted as serials only if the individual volumes within the series are not classified and catalogued separately, and the series is shelved together as a serial. It is more likely that the volumes within such series will be treated as monographs in most libraries. Multi-volume works are not to be counted as serials unless the series is intended to continue indefinitely. Serials may be in print or microform.

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*Note: For the difference between a 'Postgraduate Diploma' and a 'Graduate Diploma' course, as explained by the Commission, see page 20 of its Fourth Report.[9]

Volume A physical unit of any printed, typewritten, hand-written, mimeographed or processed work contained in one binding or portfolio, hardbound or paperbound. Serials bound or waiting to be bound are to be counted only as 'bibliographic volumes' as defined on page 65.

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CHAPTER 4

BASIC PROVISION OF MONOGRAPHS

Introduction

The basic provision of monographs (see page 67 for definition) that is necessary in the initial establishment of a college library collection accounts for the largest proportion of funds required for library materials. It is important, therefore, that considerable efforts should be devoted towards estimating approximately how many monograph volumes ought to be acquired by a college to provide a basic collection adequate to meet the initial course needs of students and staff. Such a basic collection will require continuous supplementation as new works are published and older material ceases to be useful, quite apart from new basic collection additions that may be needed, because of the establishment of new courses and expansion of the college. However, the first requirement is provision to meet the initial needs of members of a college.

As we discuss in our review of the literature in Volume 2, there have been a considerable number of attempts to calculate the dimensions of this basic collection for different kinds of institution (many of which are illustrated in Appendix 1), and we concluded that the technique of devising formulae to specify levels of input to college library collections was valid as a basic funding device. However, an examination of the standards that have been proposed, both in Australia and overseas, revealed extraordinary variations in the size of basic collections recommended for various types of higher education institution, with overall sizes being proposed from 5,000 volumes to 2,000,000 volumes. The justification for the figures proposed was in most cases lamentably weak, usually being based, one way or another, solely on comparisons with existing collections in various institutions contemporarily regarded as a 'good' model to follow.

Rather than make recommendations by analogy with previously published standards, or simply by referring to current

C.A.E. library collection sizes as a base, we set out, therefore, to examine the present adequacy of C.A.E. library collections, as revealed by various tests, with the aim of projecting from the results of these tests the possible collection size that might be necessary to provide a given level of service. This approach was sought because it provided a way of linking an ideal situation with that existing currently. This link is necessary if recommendations are not to be seen as pure 'pie-in-the-sky', and so that any proposed levels of provision above the current level are capable of achievement from the present situation, within a realistic time period.

A decision was made to make separate studies of the requirements for monographs and for serials, although many published recommendations make no distinctions between the two different types of material in calculating volumes to be provided. We are convinced that a distinction needs to be made. The continuing nature of a serial commitment in a library means that the selection of serial titles is necessarily a more important decision than that of the selection of an individual monograph. There is also the difficulty of defining exactly what a 'serial volume' comprises in many cases and it is doubtful whether serial volumes and monograph volumes may simply be aggregated as though they were of equal importance to the library.

Research Design

Since all college and university 'library use studies' show that the great majority of material used in tertiary libraries is related to course requirements, our studies concentrated particularly on monograph materials required for course purposes. Ideally, the detailed requirements for materials for the whole range of courses offered by C.A.E.'s should be studied. However, this was not feasible within the limits of the study, and it is doubtful whether any attempt to cover all course requirements would be successful, or even desirable, because of the changing nature of courses in colleges. Six course areas were therefore chosen for detailed study - accounting, architecture, chemistry, mechanical engineering, pharmacy and 'social science' (which was defined in this case to include only economics, politics and sociology).

The course areas listed were chosen because:-

(a) Each course area was within one of the major course groupings of related study areas offered by colleges, i.e. commercial and business studies; building, surveying and architecture; applied sciences; engineering and technology; para-medical studies; and liberal/general studies. The other major groupings from which courses were not selected are agriculture; art and design; and teacher education. Agriculture was excluded because of its special situation in which students were situated only in specialised colleges situated in country areas, with relatively small numbers involved. At the time that the initial study was set up, it was not known whether funds would be available to extend the project work beyond studies at the Western Australian Institute of Technology, which at that time had no course in teacher education. It was also considered that since the great majority of teacher education students were then studying in monovocational colleges, which had only recently become Colleges of Advanced Education, and which had a completely different history of library development from that of the multidisciplinary colleges, the study should not include teacher education in the first instance. No course area was selected from the art and design grouping because of difficulties of scheduling related studies within the course structures in such programmes, and the fact that relatively small numbers of students are engaged in any particular course within the art and design area.

(b) Each course area was one which was studied widely, in both metropolitan and country colleges, and, in the case of pharmacy, in both multidisciplinary and monodisciplinary colleges. Comparative studies could therefore be made in the same course area in different colleges.

(c) They were each areas in which a substantial number of students throughout Australia were involved. This meant that a sufficiently large number of students would be involved for any results of this and any other related studies not to be too heavily biased by the actions of a few students.

The major problem in studying retrospective collection adequacy is in deciding what materials ought to be in the library of a college offering any particular course. The traditional approach to this problem is to use a checklist of items drawn from selected bibliographies (such as 'Books for College Libraries' or 'Choice'), and test whether such items have been purchased by the library concerned. For the purposes of this project this approach was neither possible nor desirable, for two reasons:-

(1) No critical bibliographies were available with an up-to-date coverage of the subjects under study, and the requisite Australian bias. In any case, it was considered doubtful whether any published general subject listing necessarily has a high relevance for current Australian undergraduate courses.

(2) The ordinary checklist approach does not take into account use factors in a library, which are particularly important in an undergraduate context, and which may reduce the effective availability of material well below the level of theoretical holdings, especially in colleges with large numbers of students and relatively small library stocks.

The test mechanism adopted was the Document Delivery Test procedure devised by Richard Orr and his associates[1], which was developed originally to test the adequacy of medical libraries in the United States. As we have described on pages 75-76 of Volume 2, this procedure rates the adequacy of a library's service in terms of its performance in delivering required documents from its collection, or from elsewhere, this performance being rated as the time taken to supply each document, i.e. immediate availability on the shelf is given the highest rating, but the library still rates some credit if it is able to supply the required document within a longer period of time. The Document Delivery Test is a simulated test mechanisim, i.e. it does not test how adequate a particular library is in supplying the items actually demanded by its readers, as does the 'Failure Survey'. However, as we discussed at length in our literature review, the Failure Survey method does not take into account what should be demanded, merely what is demanded, which may have been heavily conditioned by previous experience in the library. We concluded, therefore, that although the 'Failure Survey' method is particularly valuable for an individual library in pinpointing areas of weakness in both the collection and its availability, it was not a technique suitable for producing comparative data on collection adequacy in different institutions. Nevertheless, it must be stated that the validity of the Document Delivery Test, as with any other simulated demand technique, rests on the extent to which the sample of test documents is in fact representative of material which is needed by members of the institution whose library is under test.

Application of Document Delivery Tests

The approach adopted was to contact all C.A.E. lecturers, throughout Australia, teaching in the six subject areas referred to (and also university lecturers of undergraduate classes in pharmacy and architecture, as the number of such lecturers in C.A.E.'s is relatively small), and to ask them to supply details of all references that they recommended to students in their current undergraduate classes, whether monographs, periodical articles, or audio-visual materials. After appropriate follow-up procedures, substantial responses were received from over 350 lecturers, representing about 42% of those known to be teaching in the areas concerned. These replies were then supplemented by items listed in the recommended reading lists printed in C.A.E. handbooks and calendars, for those course units for which no reply had been received. This was not as satisfactory as receiving full reading lists, but the combination of approaches ensured that at least some items were received from the material recommended in all course units from all the course areas concerned, throughout Australia.

The references received for each course area were then compiled into a consolidated list to provide a pool of items from which statistically valid samples might be drawn to test the availability of items in a college library. The advantages of using the method described to form the pools for test purposes were:-

(a) The references were representative of the actual material being recommended and thus likely to be used in colleges offering the course areas concerned. They were therefore current in terms of usefulness.

(b) The references represented items considered by teaching staff, who should, after all, be able to express an informed view, to be valuable for student use in the fields concerned, with regard to quality and level.

(c) The references represented the combined opinion of many academic staff in the fields concerned and therefore have a considerable weight. Any individual lecturer may be biased or take a narrow or outdated view of a subject, but it is unlikely that this will happen with a large number of lecturers in a wide range of colleges.

However, the method of compilation also has some disadvantages:-

(a) The pool of titles will be biased by the recommendations of lecturers who tend to recommend relatively large numbers of items. Because of the high number of replies received this was not considered a major drawback. It may also be argued that the C.A.E.'s library collection has to meet the demands of the most demanding of its courses, and not merely reflect the wishes of teaching staff who are not library-oriented.

(b) Recommended items from lecturers do not necessarily represent the totality of material needed by students. However, a collection that is able to provide a high proportion of recommended items (particularly those recommended by lecturers other than those of the college being tested) will also be able to provide a similar high proportion of other relevant material needed for course purposes, if the test sample is representative of overall needs.

(c) Course requirements in one college may be different from those in another college. However, the level and overall content of courses in a particular subject area is similar from college to college. Although course emphases may differ, and particular works recommended in one college may be different from those recommended in other colleges, all the recommended works may be considered appropriate to student use, allowing for non-recommended course reading, individual project work, and future variations in recommended reading arising from changes in course emphasis or teaching staff preferences.

(d) Teaching staff recommendations may be heavily constrained by the material actually available in a college library. This is probably true in any individual college, but it is doubtful whether it is true for colleges as a whole, where libraries will reflect the overall sum of teaching staff preferences for materials to a far greater extent than is possible in any one college. (It may possibly still be true for very expensive works which no C.A.E. may have been able to afford.)

It was considered, therefore, that the pools of references compiled do provide a valid base against which the adequacy of college libraries might be measured, a base which is realistic as a measure, and yet provides a reasonable test of the breadth and depth of collections.

The reference pools differed considerably in size from one course area to another. In part this was due to the fact that there were a greater number of lecturers teaching in some course areas than in others. But it also indicated that a wider range of titles is likely to be required for some course areas. The pools ranged from nearly 700 items in the case of pharmacy to 6,500 items in 'social science'.

From each pool of references, samples of approximately 320 items (430 items in the case of social science, where the relatively large pool of items required a larger sample for statistical significance) were drawn. The size of samples was chosen so that, after any items which could not be bibliographically verified were discarded, the remaining sample was of a size statistically representative of the whole pool from which it was drawn (i.e. D.D.T. 'Capability Index' to within ±4% with 90% confidence). Also, as previous studies had suggested, the size allowed each test to be carried out within a single day.

The Document Delivery tests were carried out essentially as recommended by Orr[2]. We concluded, as had investigators recently engaged on a similar study of college and university libraries in England[3], that Orr's suggested time patterns and weightings were in fact also suitable for the C.A.E. situation, i.e.:-

Available in less than 10 minutes = Weight 1
Available in 10 minutes to 2 hours = Weight 2
Available in 2 hours to 24 hours = Weight 3
Available in 24 hours to 1 week = Weight 4
Available after more than 1 week = Weight 5

The 'Capability Index' (C.I.) for each library is then calculated as being:-

$$\text{C.I.} = \frac{5 - \text{mean weight}}{4} \times 100\%$$

Essentially the weightings mean that more than a week is not an adequate supply time for the average user, while a supply time of within a week (4 days on average) will be adequate for only 25% of items sought, within one day (12½ hours on an average) will be adequate for 50% of items sought - up to 100% adequacy only for items available within 10 minutes. It is possible to argue about the weightings applied, but experience of working in college and university libraries, and the very low known incidence of students' preparedness to reserve documents not available immediately (a fact confirmed by the results of our study of student sources which showed a very low propensity to reserve or request documents which the college library failed to supply - approximately one reservation per nine failures), suggest that the weightings are reasonable.

The initial tests were carried out at the Western Australian Institute of Technology (W.A.I.T.) central library in the second semester of 1974, for the six course areas described, and the studies were replicated during 1975 at the Ballarat Institute of Advanced Education (B.I.A.E.)*, Gippsland Institute of Advanced Education (G.I.A.E.), and the Royal Melbourne Institute of Technology (R.M.I.T.) libraries, in course areas where studies were offered at the college concerned. Studies in three course areas were also conducted at the South Australian Institute of Technology (S.A.I.T.) with the co-operation of the Chief Librarian, but the results from S.A.I.T. must be treated with some caution as they were not carried out by the project investigators, and checking procedures may not have been as rigorous as at other institutions. It had been originally planned to replicate the tests in one subject area at a monovocational college also, but the college concerned refused co-operation at relatively short notice and prevented a comparison being made.

Results of Document Delivery Tests

Table 19 summarizes the overall results of the tests at the five college libraries.

The Document Delivery Test Capability Index scores, which represent the likely effective availability of documents to the user at the the time of the tests, were calculated in two ways:-

(1) Ignoring reduction in availability caused by physical constraints, such as the need to store materials in some closed access storage area outside the main library, or more importantly, the existence of branch libraries.

(2) Taking all local factors into account to give a 'true' Capability Index, i.e. the success rate that could be expected by a user seeking the documents in each sample at the time of the test.

The immediate availability rates (i.e. with supply time less than 10 minutes) were calculated in the same way. The difference between immediate availability and the percentage of items owned by any particular library is accounted for by 3 kinds of factors:-

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**Note:* Now amalgamated with State College of Victoria - Ballarat, to form Ballarat College of Advanced Education.

TABLE 19

RESULTS OF DOCUMENT DELIVERY TESTS FOR MONOGRAPHS

Course area		Accounting	Architecture	Chemistry	Mechanical Engineering	Pharmacy	Social Science
% of sample items owned and catalogued by college libraries	B.I.A.E.	62.4%	-	47.4%	59.7%	-	32.5%
	G.I.A.E.	42.2%	-	35.1%	46.2%	-	32.2%
	R.M.I.T.	54.4%	61.8%	60.3%	74.1%	-	46.8%
	S.A.I.T.	61.3%	53.7%	-	59.4%	-	-
	W.A.I.T.	84.4%	72.5%	79.6%	72.2%	70.0%	64.2%
% of sample items available immediately (i.e. within 10 mins) (assuming user went to correct branch of library first time)	B.I.A.E.	54.1%	-	42.9%	51.4%	-	25.8%
	G.I.A.E.	35.0%	-	30.4%	39.5%	-	29.6%
	R.M.I.T.	43.3%	48.7%	47.9%	62.1%	-	37.0%
	S.A.I.T.	53.0%	43.0%	-	53.7%	-	-
	W.A.I.T.	60.9%	52.5%	56.2%	52.1%	47.8%	55.1%
% of sample items available immediately (assuming user went first to branch of library serving course area)	B.I.A.E.	51.9%	-	40.3%	49.6%	-	25.8%
	G.I.A.E.	34.4%	-	30.0%	38.7%	-	29.6%
	R.M.I.T.	42.8%	48.7%	47.9%	62.1%	-	37.0%
	S.A.I.T.	48.1%	30.7%	-	44.8%	-	-
	W.A.I.T.	59.9%	51.0%	50.6%	47.9%	43.7%	53.9%
Document Delivery Test Capability Index (ignoring delays caused by items being in branch libraries)	B.I.A.E.	57.0%	-	44.3%	53.0%	-	27.6%
	G.I.A.E.	36.5%	-	31.4%	40.9%	-	30.3%
	R.M.I.T.	45.3%	51.2%	50.8%	64.7%	-	38.6%
	S.A.I.T.	51.0%	44.6%	-	54.6%	-	-
	W.A.I.T.	66.4%	56.9%	62.5%	56.4%	53.7%	57.0%
Document Delivery Test Capability Index (actual, taking into account all local factors)	B.I.A.E.	56.5%	-	42.4%	50.6%	-	27.6%
	G.I.A.E.	36.1%	-	31.1%	40.4%	-	30.3%
	R.M.I.T.	44.9%	51.2%	50.8%	64.7%	-	38.6%
	S.A.I.T.	50.3%	35.5%	-	47.2%	-	-
	W.A.I.T.	62.7%	55.5%	56.8%	53.3%	50.6%	56.0%

(1) Use Factors

1.1 Items on loan, including inter-library loan

1.2 Items in use within library

1.3 Items known to be missing

1.4 Items not located, but probably missing or misfiled on shelves, as a result of use

(2) Library Processing Factors

2.1 Items at binding, or being repaired

2.2 Items awaiting or in process of cataloguing, or recataloguing

(3) Physical Factors

3.1 Items in special storage area, not accessible to readers

3.2 Items at a branch library

The importance of any particular factor in reducing availability can be expected to vary from college to college, depending on the volume of use, library service policies, and campus layout. However, Table 20 indicates the overall proportion of items in each college unavailable for the 3 groups of reasons. The effects of each factor are of course not equal, i.e. an item in use within the library may be available with an hour or two, whereas a missing document may never become available. This is taken into account in calculating the Capability Index scores from the detailed results for each college shown in Appendix 5.

Significance of Results

The results of the tests suggest:-

(a) Effect of Use Factors

Use factors, not surprisingly, account for the majority of the monographic material owned but unavailable in college libraries. Other factors appear to be of minor importance, except where a college library has to serve more than one major campus.

TABLE 20

UNAVAILABILITY OF MONOGRAPHS OWNED BY COLLEGE LIBRARIES

College Proportion of items not available immediately as a result of:	Ballarat I.A.E.	Gippsland I.A.E.	R.M.I.T.	S.A.I.T.	W.A.I.T.
1. Use factors	12.0%	11.9%	18.5%	13.2%	21.4%
2. Processing factors	2.4%	1.2%	1.1%	N.A.	4.9%
3. Physical factors	3.3%	1.2%	0.1%	16.4%	4.1%
Monograph holdings per capita (F.T.E.) at time of test.	37.0	19.9	12.2	24.6	13.3
Proportion of library's monograph holdings on loan at time of test	3.1%	8.7%	10.1%	N.A.	9.1%

(b) Use Factors and Unavailability

Use factors appear to result in a greater proportion of material being unavailable in colleges serving larger populations. However, the relationship is not linear, and even in the largest colleges use of the collection at any one time is unlikely to cause more than about 20% of the collection to be effectively unavailable. Were all colleges to receive equal per capita use of their libraries, one would expect the proportion of the collection unavailable at any time to be linked closely to the number of monographs per capita held by the library, and Table 20 suggests that this may well be the case, the colleges with the lowest per capita (E.F.T.) holdings having higher proportions of their material unavailable.

(c) Student Numbers and Collection Size

Since use factors, which relate fairly directly to college population, reduce availability of monograph titles by less than 25% of the items sought, we must conclude that student numbers are not the major factor which determines the necessary size of a collection. Since the tests were simulated tests of title availability and not volume availability, they underestimate the actual unavailability of particular titles owing to peak demands placed on them for short periods of time. However, we assume, from our observations of college library duplication and short-loan policies, that each library is attempting to provide a reasonable rate of availability for documents in heavy demand. Even if it does not wholly succeed in so doing, (and this information could be revealed by the carrying out of failure surveys in each library) we consider it unlikely that this factor causes significantly higher overall unavailability arising from use factors than is reavealed by our studies. The results of failure surveys conducted overseas suggest that a substantial proportion of supply failure is concentrated on a relatively small number of titles, but the way in which our test samples have been constructed would tend to include a substantial proportion of items in any college likely to be in relatively heavy use throughout the year. Thus the 'peak demand' factor does enter into our results to some extent, though the extent to which it is underestimated is, admittedly, unknown. We feel that it is unlikely, even in the largest colleges, that the allowance to be made in calculating total collection provision directly related to the size of population served would be larger than 40% of the total collection, i.e. that 'peak loadings' falling on titles held in multiple copies would result in a maximum of a further 15% of the collection being unavailable, additional to the 25% title unavailability already suggested. This means that at least 60% of the collection needed arises from factors other than student numbers, mainly the range of courses offered.

(d) Library Location and Availability

Physical constraints, and particularly the existence of branch libraries, may lead to a considerable reduction in effective availability of material. The results from S.A.I.T. in Table 21 illustrate this clearly. At the time of the tests, the college operated two major libraries in Adelaide on campuses about 12 km apart, and another branch library in Whyalla 400 km away, with several courses operating on only one campus, but with others split between the two Adelaide campuses, and some given at one campus in Adelaide and also at Whyalla 400 km away. The effect on material for accounting courses, which, with the related courses in business administration, were offered at only one campus in Adelaide, was relatively small as regards reduced availability, (8.0% in terms of immediate availability of items owned by the library). But in architecture and mechanical engineering, for which some course units were presented in each of the city campuses, the reduction in effective availability of titles was 9.1% and 7.4% respectively as a proportion of the titles sought,

TABLE 21

REDUCTION IN EFFECTIVE AVAILABILITY OF MONOGRAPHS OWNED, BECAUSE OF THE EXISTENCE OF BRANCH LIBRARIES

Course area / College	Ballarat I.A.E.	Gippsland I.A.E.	S.A.I.T.	W.A.I.T.
Accounting	3.5%	[illegible]4%	8.0%*	1.2%
Architecture	-	-	22.9%**	2.1%
Chemistry	5.5%*	1.1%	-	7.0%*
Mechanical Engineering	3.0%	1.7%	15.0%**	5.8%*
Pharmacy	-	-	-	5.9%*
Social Science	0.0%	0.0%	-	1.9%

** Courses split between two campuses

* Courses offered separately on more than one campus, or with closely related courses offered on a different campus.

and 22.9% and 15.0% respectively in terms of the immediate availability of items owned by the library. The results from Ballarat, Gippsland, and the W.A.I.T. suggest that in multi-campus institutions, even where courses covering a particular subject field are offered solely on one campus, the reduction in effective availability is likely to be 1-3% of the library's collection, while for courses offered separately on more than one campus the reduction may be of the order of 6-8% of the items owned.

(e) Overall Adequacy

Overall adequacy in some of the smaller colleges is likely to be low. At Gippsland, with a total monograph collection of about 19,960 volumes at the time of the test, the Capability Index ranged from 30.3% to 40.9%, while at Ballarat, holding 38,340 monograph volumes, the Index varied from 27.6% to 57.0%. Even in the colleges with the largest collections, availability never reached higher than two-thirds of the items sought. This compares with recommendations of 80% immediate availability suggested overseas for undergraduate provision (see pages 51-52 in Volume 2).

(f) Adequacy in Newer Course Areas

Collections appear consistently to be least adequate for material in the Social Sciences area. This may well be due to the fact that in all the colleges concerned, substantial courses in the fields of economics, politics and sociology have been started relatively recently, so that libraries have still been unable to build up their retrospective collections in the social sciences area to the same extent as has been possible over a longer period of time with some of the older course areas. It is clear also that social science cannot be regarded as a 'course area' in quite the same way as the other areas, in that the range of material recommended by lecturers is considerably wider than for any of the other fields. Even if a single 'social science' programme is offered within a college, for library purposes it probably needs to be regarded as a combination of the three or more disciplines in which major specialisations are offered, each of which has library needs equivalent to a single programme in other areas. Nevertheless, it is possible, given time, for courses requiring a relatively wide range of materials to be as adequate as other, more narrow, courses. Capability Indexes for Architecture, in which the second largest total number of references was recommended by lecturers, were average or above in the colleges concerned.

Test Results and Required Monograph Collection Size

The results of the Document Delivery Tests for each course area were then linked to the existing size of library collections in the colleges. Apart from the overall monograph collection size, estimates were made, with the help of library staffs in each college, of the number of monographs in the collection relevant to each course. This estimate was made using McGrath's technique[4] of translating the syllabus for each course into the classification numbers used by each library for the subjects concerned, and then, from the library shelf list, counting the number of titles and volumes classified at each classification number involved.

The results are illustrated in Figures 1.1 and 1.2, which show plots of size of relevant monograph collection against the level of ownership and the immediate availability score for each course area. 'Social sciences' was considered a combination of the three subfields in which references were collected - economics, politics and sociology.

It was not expected that the study would reveal anything more than approximate collection sizes that might provide a given level of availability, and Figure 1.2 shows this to be the case. With different rates of development, and different policies on discarding, it is likely that some college collections will contain higher proportions of 'useful' material than others. Colleges in which courses in the areas

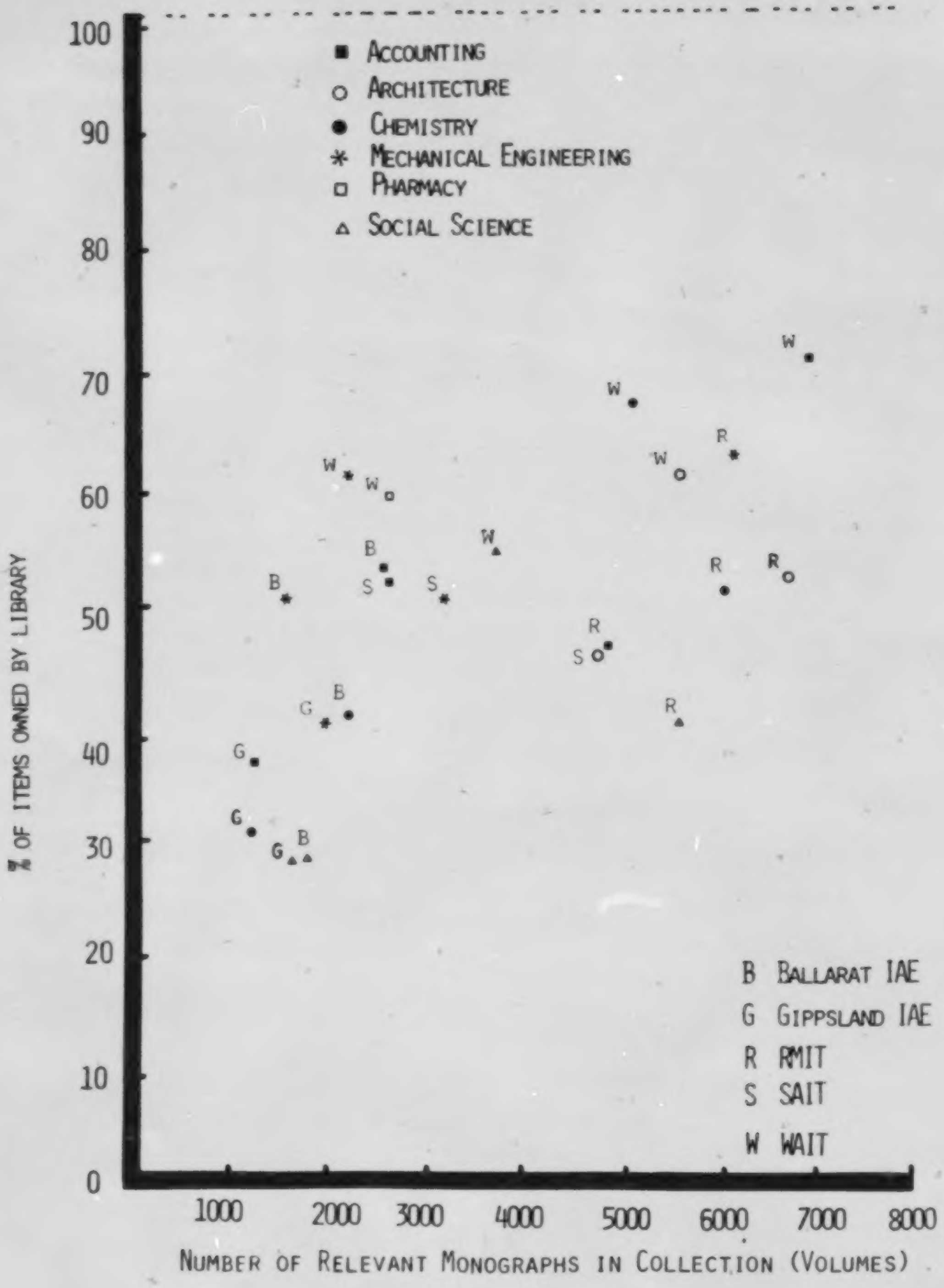
■ ACCOUNTING
○ ARCHITECTURE
● CHEMISTRY
✳ MECHANICAL ENGINEERING
□ PHARMACY
△ SOCIAL SCIENCE
B BALLARAT IAE
G GIPPSLAND IAE
R RMIT
S SAIT
W WAIT
% OF ITEMS OWNED BY LIBRARY
0
10
20
30
40
50
60
70
80
90
100
1000
2000
3000
4000
5000
6000
7000
8000
NUMBER OF RELEVANT MONOGRAPHS IN COLLECTION (VOLUMES)
W
W
W
R
W
W
W
B
S
S
B
R
R
R
S
B
G
G
R
G
G
G
B

FIGURE 1.1

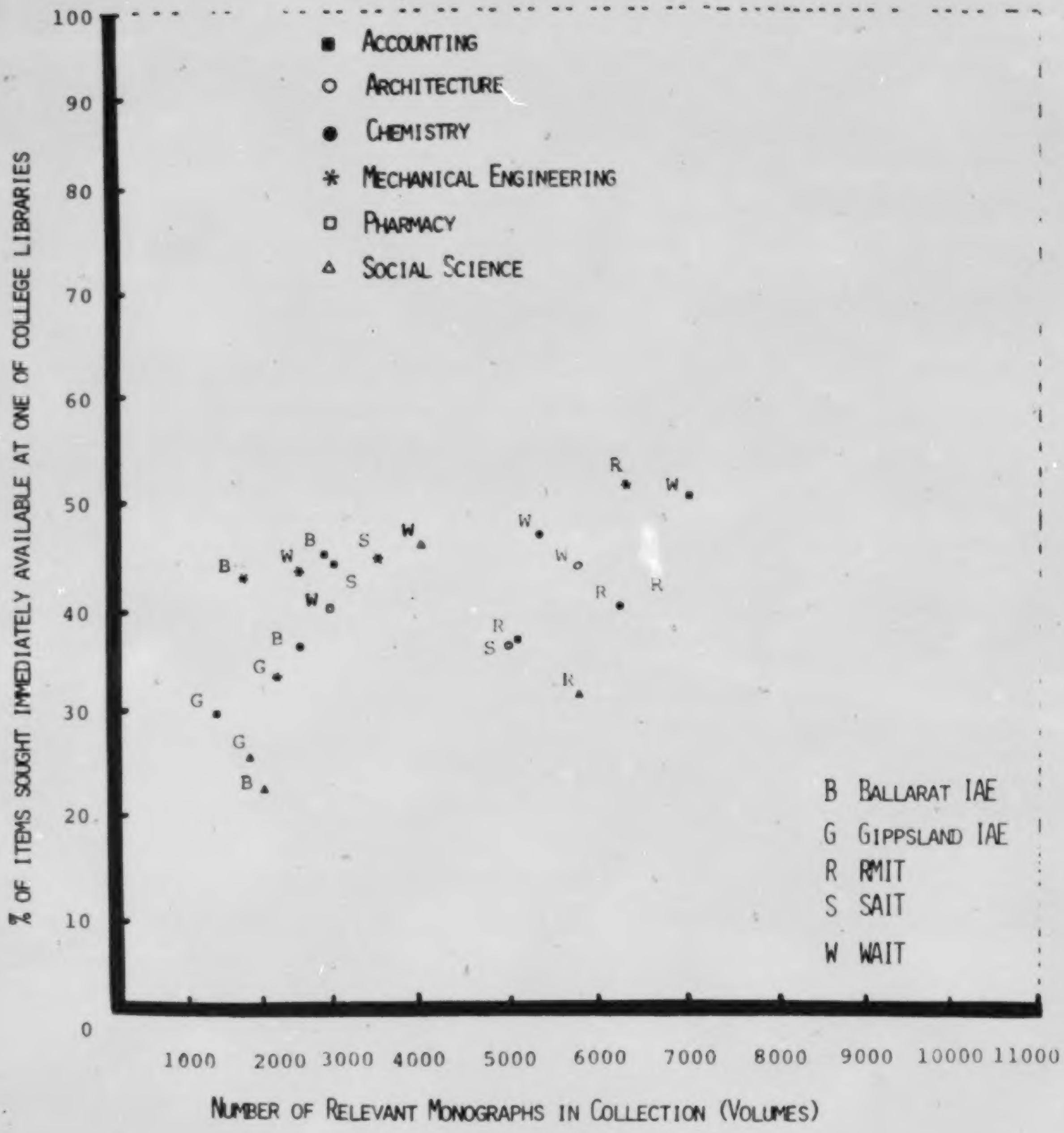
■ ACCOUNTING
○ ARCHITECTURE
● CHEMISTRY
* MECHANICAL ENGINEERING
□ PHARMACY
△ SOCIAL SCIENCE
B BALLARAT IAE
G GIPPSLAND IAE
R RMIT
S SAIT
W WAIT
% OF ITEMS SOUGHT IMMEDIATELY AVAILABLE AT ONE OF COLLEGE LIBRARIES
100
90
80
70
60
50
40
30
20
10
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
NUMBER OF RELEVANT MONOGRAPHS IN COLLECTION (VOLUMES)

FIGURE 1.2

studied have been conducted for many years are likely to have libraries which contain more older, and possibly obsolescent, material than colleges which have recently established collections in the fields concerned. Nevertheless, the results suggest that larger collections are more able to supply material likely to be needed, but that to achieve a very high level of availability is likely to require collections of many times the size of those existing in 1975.

There is therefore, the question of what is a reasonable rate of availability that might be aimed at. To some extent this is a pure value judgement. However, as we discuss in our literature review in Volume 2, Buckland has suggested[5], on the basis of work carried out at the University of Lancaster and elsewhere, that if the rate of availability of material sought is below about 60%, users tend to become discouraged and will try other sources. This must be regarded as speculative, but for the kind of undergraduate material with which our tests have been concerned, and on the basis of availability levels that have been suggested elsewhere[6,7] for college and university libraries, we regard a level of 60% immediate availability as an absolute minimum acceptable target to be achieved, if users are to receive an acceptable level of service.

Clearly, there will be differences from subject to subject in the size of collection that would provide this level of availability for any particular course programme. However, the results in Figures 1.1 and 1.2 suggest that an 80% ownership level may well be achieved if the library has approximately 6,000 'effective volumes' relevant to each course. (The term 'effective volume' has been borrowed from the report of the Victorian Education Department's Advisory Committee on Teachers College Libraries[8], which uses the term in the sense of excluding any obsolescent material that may not have been discarded from a collection. In arriving at our estimates, we have given fairly small weight to the results from R.M.I.T., which consistently showed relatively low ownership and availability levels from fairly large collections, suggesting that the library contained a relatively high proportion of obsolescent material in the subjects of study at the time of the tests. Some confirmation for this is provided by statistics which show that the R.M.I.T. library had acquired a lower proportion of its collection in the previous five years than any of the other libraries - 69.2% as against an average 81.1% for the others.

An 80% ownership level would probably provide an average 60% availability level in the largest colleges, but as high as 75% availability in smaller colleges of the size of Bendigo and Gippsland (approximately 800 E.F.T. students in 1975), assuming a single college library system. If the aim is to provide an equal standard of service in all colleges, then some part of the allowance for each course must relate to student numbers. The results in Table 22 suggest that overall, given collections of equal size, overall availability will be reduced by about 15% more in the largest colleges than in the smaller colleges (though considerable variations could be expected because the ratio of student numbers will vary from course to course), and about 20% more than if there was no student use at all. A further unavailability would in practice result from the 'peak demand' effect, referred to on page 85 above, which falls on titles held in multiple copies, and which is not measured by our simulated test. This may lead to an overall reduction in availability of perhaps 25% of the items sought. A 25% overall reduction would represent 1,875 volumes (6,000 volumes = 80%) and means that 60% availability might be achieved with 4,125 volumes, as a collection to be supplied at the start of a new course, irrespective of student numbers.

Course Overlap

However, there are two further problems to be solved before any such figure may be incorporated into a provision formula.

First, courses are not totally independent for library purposes, and there will be an overlapping use of some volumes by students from two or even several different course programmes. The extent to which this will happen will vary considerably, and as several citation studies have shown (e.g.[9]), some

TABLE 22

ESTIMATED SIZE OF MONOGRAPH COLLECTIONS IN COLLEGES, RELEVANT TO EACH OF SIX COURSE AREAS

Course Area	Number of Volumes Relevant to Course Area at Each College				
	Ballarat Institute of Advanced Education	Gippsland Institute of Advanced Education	Royal Melbourne Institute of Technology	South Australian Institute of Technology	Western Australian Institute of Technology
Accounting	2,470	1,150	4,800	2,560	6,890
Architecture	-	-	6,650	4,700	5,540
Chemistry	2,130	1,310	6,030	-	5,060
Mechanical Engineering	1,480	1,870	6,100	3,100	2,110
Pharmacy	-	-	-	-	2,510
Social Sciences	5,090	4,630	16,630	-	10,890
Monograph Volumes in Total Collection	38,340	19,960	99,600	80,000	93,600

subjects provide a base for other studies, while some may give very little. For example, basic chemistry books might well be used not only in chemistry courses, but also by students of pharmacy, chemical engineering, geology, etc., while basic texts in physiotherapy may be used by no courses other than those in physiotherapy. We have no detailed evidence on the extent of overlapping use of monographs by students in different courses, but since students on differing programmes are often engaged in some of the same course units, particularly in the first year of courses, obviously such overlap must be significant in extent. Our studies relating to the acquisition of currently published material suggest (in Chapter 5) that overlapping use of monographs between related course programmes may be of the order of 35% of titles. However, the titles receiving overlapping use will tend to have a greater use and thus require a higher rate of duplication. We feel justified therefore in reducing the suggested number of exclusive volumes per course area by rather less than 35% to a total of 2,750 volumes (65% of 4,125 volumes in fact equals 2,681).

Definition of Course Areas

The second problem to be considered is that of defining exactly what is meant by a 'course area' for the purposes of making any allowance. Our studies have been based on the literature required for separate courses, rather than units within courses, and is necessary that we should consider the difference between a 'course area' and minor options within a course programme. The levels we have arrived at in this chapter are based on the requirements for an overall undergraduate programme of studies. Our recommendations below include guidelines on defining a 'course area' for the purposes of collection provision.

Allowance for Courses Other Than Three-Year Undergraduate (UG1/UG2) Programmes

Our empirical studies of course requirements have been based on the three-year undergraduate diploma or degree programmes. Clearly levels suitable for these programmes may not be completely suitable for other kinds of programme. It was impossible for us to gather empirical evidence in a similar way for courses at other levels.

(a) Two-Year Associate Diploma (UG3) Courses

Nevertheless, the lists provided by lecturers suggest that, in general, rather more titles are recommended to students in third-year units than in first or second-year units in the same course, and there is also a tendency for a wider range of optional units to be available in the final year of an undergraduate programme than in earlier years. We therefore recommend a provision of 1,500 volumes for each Associate Diploma (two-year) programme, where no three-year programme is also offered, i.e. rather less than two-thirds of the allowance for a three-year undergraduate programme.

(b) Post-graduate (Some PG1/All PG2) Courses

For courses at the Post-graduate Diploma level (as defined on page 71) and the Master's level, any recommendations on collection provision must be regarded as speculative, in the absence of empirical evidence. However, we cannot believe that provision for such courses should be at any lower level than that suitable for an undergraduate programme. In the United States, where there has been a great deal more experience in relation to provision to meet Master's level courses of the type being offered in C.A.E.'s, recent standards have recommended provision for Master's courses in the region of 6,000 - 7,500 volumes (see Appendix 1). Based on these considerations, we recommend that for each Post-graduate Diploma course a provision of 2,750 volumes be made, and that for each Master's programme the allowance should be set at 5,500 volumes. If both a Post-graduate Diploma and Master's programme are offered in the same field the Master's allowance only is to apply.

Allowance for Student Numbers

To this basic allocation for a course programme, as we have intimated, an addition must be made to allow for increasing numbers of students in larger colleges. Above, we have suggested that in the largest C.A.E.'s at present (W.A.I.T. and R.M.I.T.), 6,000 relevant volumes per course area is an appropriate total, and of this a maximum of 40%, i.e. 2,400 volumes, is necessary to allow for increasing student numbers. However, even the largest colleges may be expected to expand further, if more slowly. If we assume that the largest colleges have a limit of approximately 10,000 E.F.T. students, in the medium term, then, we may expect the average number of E.F.T. students per course area to rise by a further 40%-50%. Any moves towards further 'rationalisation' of course programmes, by amalgamation of colleges, or agreed areas of specialisation, would also tend to raise the average number of students engaged in each course in colleges. At present the largest colleges have an average of approximately 100 E.F.T. students per course area. This suggests that an appropriate allocation to compensate for usage factors would be 2,400 volumes ÷ 150 = 16 volumes per E.F.T. student (c.f. 15 volumes per E.F.T. student in latest U.S. college standards, which do not explain how the figure is arrived at).

Allowance for Teaching Requirements

It may be expected also that a monograph collection will need to go beyond the course needs of students, to meet the teaching needs of staff. The few studies of teaching requirements that have been made, as reviewed in Volume 2, suggested that a good deal of teaching staff requirements, beyond those of their students, is met in the form of periodical articles, while teaching staff also make use of the same books as students, so that many of their needs will be met by the basic course collection. We have no empirical evidence on which to base estimates of the extra requirements for monographs needed by teaching staff. The original Clapp-Jordan formula[10] suggested 85 volumes per faculty member, while several more recent United States standards, and the draft recommendations of the Library Association of Australia, have recommended 100 volumes per F.T.E. member of teaching staff (see Appendix 1). As all these recommendations have much lower allowances per undergraduate course area than we believe is necessary, and since our recommendations per course area will include a considerable amount of material which meet teaching staff requirements, we are recommending an extra provision for teaching staff, which would be lower than 100 volumes per capita except in the smaller colleges - 4,000 volumes plus 60 volumes per F.T.E. teaching staff member.

The provision of a basic teaching allowance is justified, because in small colleges it is more likely that only one member of staff may be teaching in each course area, whereas in colleges with a larger ratio of students per course area, there will also tend to be more teaching staff engaged in each area, and hence economies of scale in provision may be expected. The allowance also provides a basic core of material relating to the purposes, administration and methods of tertiary education. The individual allowance still permits some provision for each member of teaching staff's specialist interests within his broad teaching field.

Requirements Unrelated to Course Needs

Finally, there is the need to provide also a range of monograph material whose primary purpose is not directly related to course needs. As we have argued in our literature analysis in Volume 2, we are unable to accept the 'core collection' concept in the form it has generally been proposed in standards published overseas, because the recommendations have been unable to differentiate clearly the extent to which they include basic provision for each course area in an institution, as well as general non-course-related material. Nevertheless, if a college library is to be anything more than a provider of materials for specific teaching and learning in a subject area, and is educational in the broader meaning of the term, then it must contain a substantial range of material aimed at enabling students and staff to achieve an understanding of the world, its cultural, social and technological developments and achievements, its creative works.

Such a monograph collection might be expected to contain general reference works, such as encyclopaedias, dictionaries, introductory handbooks and directories; contemporary and classical creative literature in English; works for the layman relating to current international and Australian affairs; works on music, dramatic arts, other liberal arts and some recreational material. It is particularly important in small colleges with a limited range of course offerings that a basic minimum of general works should be provided. In larger colleges, many of the works selected for courses, particularly those in the areas of general and liberal studies, will also be suitable for the general reading requirements of students engaged in other courses. But in the small monovocational college no such spread of subject matter is automatically included in the library.

We have found considerable difficulty arriving at a figure for the basic provision of general reading materials. In many respects, the provision of this material is related to the provision of materials in smaller public libraries. Public library provision is often made on a 'books per capita' basis, with a figure of 3 books per capita being an acceptable modern standard for smaller public libraries, down to 1 book per capita in very large public libraries.[11] However, the user population of public libraries is typically around 30% fo the total population, which implies a provision of 10 books per head of the user population. For a college library, it is likely that a very high proportion of college members are users of the college library (not necessarily borrowers), perhaps 80-90%, and that a per capita figure in terms of user population is closer to the real requirements of a sizable college population.

Looking at the problem in a quite different way, many studies of the use of college and university libraries, as we have reviewed in Volume 2, suggest that the proportion of total library use not related to direct course requirements is typically between 10% and 20%. Our recommendations on monographs for course purposes would, for a 'median' college with 1,200 E.F.T. students and twenty course areas, result in a total per capita provision for course purposes of about 70 volumes. If we assume that in a college of this size at least half of the general reading requirements may be satisfied in the collection acquired in relation to course needs, then it seems reasonable to suggest that a provision of 10 volumes per head of E.F.T. students would represent an adequate level of service in a medium-sized college. (15% of 70 volumes equals 10.5 volumes) Once again, however, in the smallest colleges, there is an irreducible minimum below which coverage can not be provided. We cannot believe that it is possible to cover the kinds of material described above with less than 5,000 volumes. Again, public library standards recommendations give some confirmation. We therefore propose that a general materials allocation should be a basic 5,000 volumes plus 3 volumes per E.F.T. student. This would allow a provision of 10 volumes per capita, or greater, in small colleges with up to 1,000 E.F.T. students, and a gradual decrease in per capita provision as colleges become larger, and more multidisciplinary in nature.

Conclusions

In making the recommendations below, we are aware that many of the arguments that we have used in this chapter are tenuous and at the best, tentative. We have had the temerity to spell out the reasoning we have followed, because this gives others a chance to build on the suggestions we have made. In spite of the lack of fully conclusive arguments, we do believe that the recommendations below are solidly grounded in terms of current needs in colleges, they indicate clearly the real library costs involved in the establishment of new course areas, and they are likely to be capable of achievement in the medium term in the majority of colleges.

In applying the formula in Recommendation 3 below, many college libraries will currently find themselves well below the recommended level of provision. We see the achievement of these levels of provision as targets to be achieved in the medium-term and, at the latest, by 1985. The recommended levels should be looked at in conjunction with our recommendations regarding provision of serials in Chapter 6. Together, these recommendations imply a shift in emphasis in many colleges.

Any rationalisation of courses being offered in Colleges of Advanced Education would make achievement of our recommended levels considerably easier, as our evidence suggests that there are considerable economies of scale in situations where student numbers per course programme are larger. However, such considerations lie outside the scope of this report, and are a matter for the Commission and individual colleges to consider in a wider context.

In making these recommendations, and others later in this report, we have not concerned ourselves with the requirements of sub-tertiary courses, as the funding for such courses does not derive through the Commission on Advanced Education, and it would be the prerogative of the Technical and Further Education Commission to make any recommendations for library provision. However, we recognise that in a number of colleges, provision for such courses is made through the same library used by tertiary students. Where this is the case, it must be clearly understood that an extra level of provision needs to be made for sub-tertiary students, over and above any recommendations in this report.

RECOMMENDATION 3. That in making estimates for the necessary basic retrospective provision of monograph collections in C.A.E. libraries, the following formula be applied, to arrive at the total number of monograph volumes required:-

1.	Basic General Collection		5,000 volumes
	Plus for each E.F.T. tertiary student	Add	3 volumes
2.	For each major undergraduate course area in which the highest qualification level is an Associate Diploma (two-year course, UG3)	Add	1,500 volumes
3.	For each major course area in which the highest qualification level is a Diploma (three year course, UG2), Bachelor's degree (UG1), or 'Graduate Diploma'	Add	2,750 volumes
4.	For each post-graduate course area in which the highest qualification level is a 'Post-graduate Diploma'	Add	2,750 volumes

5.	For each post-graduate course area in which the highest qualification level is a Master's degree (PG2)	Add	5,500 volumes
6.	Basic Teaching Staff Collection	Add	4,000 volumes
	Plus for each F.T.E. member of teaching staff	Add	60 volumes
7.	For each E.F.T. tertiary student	Add	16 volumes

In interpreting this formula, the following guidelines are to be adopted:-

(1) A 'course area' is a coherent group of studies leading to a separately-designated award, at the level of Associate Diploma, Diploma, Bachelor's degree, Graduate Diploma*, Post-graduate Diploma* or Master's degree, or within the scope of a designated award, a major specialization of which a student is engaged for at least half of his study load in the last two years of his programme. Such a specialization would normally be under the control of at least a senior lecturer, with other teaching staff involved, or be given by a separate department within a School or a teachers college. We recognise that there will be some difficulties in the interpretation of this definition, and suggest that a relatively liberal interpretation, within the definition, needs to be given to specializations within the broad area of social sciences and liberal studies programmes.

(2) In deciding on course areas, reference should be made to the 'list of fields' in Appendix 3. In using this list, each line is to count as one programme, but no programme is to be counted if it includes, or is included within, the scope of another programme that has been already counted for a college. The list is not to be regarded as immutable, and new developments in colleges may be expected to add new course areas for inclusion.

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*_Note:_ For the difference between a 'Graduate Diploma' and a 'Post-graduate Diploma', as defined by the Commission[13], see page 71.

(3) Where more than one award is offered, covering the same course area, for example, an Associate Diploma and Diploma, or a Diploma and Graduate Diploma, no extra provision is to be made, i.e. the course area is to be counted once only. This also applies separately to overlap between Masters and Post-graduate Diploma programmes. Where a course is offered both at the undergraduate and at the Masters/Post-graduate Diploma level, both levels count for appropriate allowances.

(4) Monograph volumes held in microform are to be included in assessing library holdings, and counted as if they were held as their printed equivalents.

The formula is to be used in planning collection growth each year, recalculating the total volumes required to allow for course changes and growth (or decline) of student and staff numbers. Any difference arising from the result of the previous year's calculation would then need to be added to the forthcoming year's annual acquisition of monographs.

Examples of the application of the formula to five college libraries in 1975 are given in Appendix 2.

RECOMMENDATION 4. That each C.A.E. library compare the total number of volumes in its monograph collection, as at 31st December 1976, with the total number of volumes arrived at as a result of the application of the formula in Recommendation 3, and then rate its collection as falling into one of the following categories:-

Category A - Collection size 100% or more of formula recommendation

Category B - Collection size 80-99% of formula recommendation

Category C - Collection size 60-79% of formula recommendation

Category D - Collection size 40-59% of formula recommendation

Category E - Collection size below 40% of formula recommendation

Libraries in each category should then receive sufficient funds, either from their college's recurrent budgets or by special earmarked grants from the Commonwealth government, so as to reach the recommended level by the following dates:-

Category B - 1st January, 1980

Category C - 1st January, 1982

Category D - 1st January, 1984

Category E - 1st January, 1986.

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CHAPTER 5

CURRENT ANNUAL ACQUISITION OF MONOGRAPHS

Introduction

Chapter 4 has been concerned with the problem of ensuring that C.A.E. libraries have basic retrospective monograph collections capable of providing adequately for the range of courses and numbers of students served. It should be the objective of the colleges and funding bodies to assist libraries to reach these basic levels as soon as is practicable, but once these levels are reached, changes in the size of the basic collection will result largely from the introduction of new course areas, and growing student and staff numbers.

For this reason, in most college libraries, once a minimum level of adequacy has been achieved, the important financing decision is regarding the level of current acquisitions. It is of course impossible in practice to clearly separate 'current' materials from those forming a 'retrospective' collection. At the present time, the monograph acquisitions of C.A.E. libraries will fall basically into three categories:-

(1) Updating Materials

Acquisitions of currently published materials which update the existing collection, either by replacing obsolescent material (a fairly small amount at present, since a high proportion of the material in C.A.E. libraries has been acquired in the last 5-6 years - over 80% of the total), or by adding knowledge of new developments or approaches to a field of study. Since most monographs in C.A.E.'s are selected by teaching staff and, to a lesser extent, library staff, using a variety of sources - publisher's literature, bibliographies, reviews, word-of-mouth, etc. - in practice 'currently published' can probably be taken at any particular time to mean 'published within the last two years'. It may well take this long for full bibliographic knowledge to filter down to the people making selections, and for the library then to acquire the material.

(2) New Course Materials

Acquisitions of both 'retrospective' and 'current' material required in relation to new course developments. In recent years, most colleges have been expanding their range of courses offered at a considerable rate, and as we have suggested in Chapter 3, this expansion appears in some cases to have out-run the rate of library collection development, rapid though that has been.

(3) Retrospective Materials

Acquisition of material no longer 'current' in the above sense of being recently published, but needed to complete retrospective adequacy in existing course areas, in terms of the levels proposed in the Chapter 4. Few college libraries would yet be in the position, for more than a very few course areas, of needing to acquire only currently published materials for existing courses of study. In any case, student numbers in most courses are increasing, and this growth requires expansion of the number of volumes available.

The application of the formula developed in Chapter 4 covers necessary requirements for adding to retrospective collections arising from the development of new course areas or increases in students. The studies described here were aimed at arriving at the further requirements for current acquisitions, which would need to be added to any purchases necessitated to complete retrospective adequacy. As we have suggested above, the needs for current acquisition arise from:-

(a) The need to replace an item which is no longer of current use - sometimes because of its physical deterioration, but more usually in a college situation because the content of the work has been updated and/or superseded by a new edition or incorporated into a new title on a subject.

(b) The need to acquire newly published works which add to knowledge in a course area. This does not necessarily mean, of course, that all newly published works related to a course area, of a suitable academic level, need to acquired. Many new works, particularly undergraduate textbooks, simply duplicate existing material or add only marginally to the content of previously published works. However, there is a significant proportion of works published each year which it is desirable for a college library to acquire to keep its collection up to date.

Research Design

The buying of currently published books is a highly subjective procedure in practice, since many books are purchased 'blind', i.e. with the aid of only bibliographic references, publishers' 'blurbs', and reviews of varying standard to help in making decisions as to the quality and relevance of material. It is likely that any estimates as to the appropriate level of current acquisition may, for this reason, also be subjective, and not possible to specify with a high degree of precision. However, the description above of the needs for current acquisition suggests two fairly obvious approaches to the problem:-

(a) To make estimates of the number of currently published monographs suitable for possible acquisition by college libraries.

(b) To estimate the rate at which monographs in the collection are likely to become obsolescent for normal course purposes, and therefore require replacement. This rate can then be related to the total size of the collection, as estimated from the formula in Chapter 4, to determine the annual replacement rate in volume terms.

Both these approaches present some difficulties, and it was not considered that either approach was necessarily superior as a theoretical method, quite apart from the fact that the results obtained from such approaches could be expected only to be of the right order of magnitude, rather than exact. It was hoped that by using both techniques in combination, a more satisfactory estimate might be arrived at.

Volume of Current Publication Approach - Design of Study

The approach to estimates of the level of currently published material suitable for C.A.E. library acquisition was modelled on the procedure used in the College of Education Libraries Research Project (CELRP) in the United Kingdom in 1972[1]. Our study concentrated on monograph material listed in the Australian National Bibliography (A.N.B.) and the British National Bibliography (B.N.B.). The reason for this concentration is that it was confidently expected that the majority of currently published material acquired by Australian C.A.E. libraries would be listed in one or other of these two bibliographies, since Australia and Great Britain were the major sources for book purchases, and materials suitable for undergraduate teaching and learning are largely of the kind likely to be found in national bibliographies. (In passing, it should be noted that the ending of the Traditional Markets Agreement may well result in a higher proportion of monographs being acquired from the United States in the future. However, this does not affect the results of our study. Many of the books currently acquired by C.A.E.'s originate in the United States, and exist in American editions, but they are usually published simultaneously, or within a reasonable period, in British editions, and hence appear in the British National Bibliography.

To test the validity of our assumption, a sample of the monographs with 1972 publication dates acquired by two colleges during 1972-1974 were checked against the 1972, 1973 and 1974 annual issues of A.N.B. and B.N.B. The two colleges differed considerably in both overall size and range of courses offered. Table 23 illustrates the results.

As expected, some items appeared both in A.N.B. and B.N.B., since some works were published in both Australian and British editions, and also A.N.B. includes works of Australian interest published overseas. Figures supplied by the National Library of Australia[2] suggest that about 3-4% of the material in A.N.B.

TABLE 23

PROPORTION OF MONOGRAPH ACQUISITIONS LISTED IN AUSTRALIAN/BRITISH NATIONAL BIBLIOGRAPHIES IN TWO COLLEGE LIBRARIES

	College A	College B
Sample Size	754 items	537 items
Proportion of Items appearing only in A.N.B.	13.1%	18.6%
Proportion of Items appearing only in B.N.B.	59.4%	54.7%
Proportion of Items appearing in both A.N.B. and B.N.B.	3.3%	0.7%
Proportion of Items appearing in either A.N.B. or B.N.B.	75.9%	74.1%

is published in the United Kingdom. In practice, variations in the proportion that Australian and British works form of the total current monographic acquisition may be expected from college to college. Colleges with some concentration on Asian Studies may well need a higher proportion of items originating from Asia. There was no strong evidence of substantial variation that might be caused by a unusual subject range of courses in a particular college. It may well be true that a higher proportion of material originates in the United States in some course areas (and our samples suggested that business studies was an example) but as we have indicated, a substantial proportion of U. S. material appears in the British National Bibliography. In multidisciplinary colleges we would expect variations to be small in relation to the total.

The aim of the study was to determine the extent and proportion of the items listed in the two bibliographies which could be considered relevant to C.A.E. undergraduate courses, and then to adjust the figures arrived at, to allow for the proportion of monograph items likely to be acquired by colleges which would not be listed in either of the bibliographies. The same six course areas as in the previous study described in Chapter 4 were selected for examination - accounting, architecture, chemistry, mechanical engineering, pharmacy and social sciences, and the needs of these courses were linked to monograph material which appeared in the 1972 and 1973 issues of A.N.B. and B.N.B. Two related approaches were adopted:-

(a) Members of staff at the Western Australian Institute of Technology, in the departments teaching the six course areas concerned, were asked to scan an annual issue of both of the bibliographies, and mark each item that they considered to be relevant, as regards both subject and level, to the undergraduate course in which they were involved, either for student use, or for their own use in teaching.

(b) For each course area, the detailed syllabuses of course units were obtained, and the course details were assigned classification numbers according to the Dewey Decimal Classification scheme by which both bibliographies are arranged (with some variations), as suggested in the technique used by McGrath[3]. All items appearing in the two bibliographies at each classification number assigned were then scanned by the project team, and individual items were again marked as being suitable for student and or lecturer use in the course concerned. The selections made in this second study were made quite independently of those made by lecturers in study (a), i.e. neither the project team nor the lecturers knew what had been selected by the other group at the time of selection.

(c) A random sample of a month's issues of the 1972 and 1973 Australian and British National Bibliographies were sent to a 25% sample of all teaching staff in the Western Australian Institute of Technology, and staff were asked to mark items relevant to particular undergraduate course areas, as in method (a) above. An 86% response rate (89 replies) was achieved, and the number of items marked by each lecturer was then related to the total number of items published in the issues concerned, with the aim of eliciting the average proportion of material in the bibliographies considered to be relevant to a W.A.I.T. undergraduate course area.

Volume of Current Publication Approach - Results

The results of the first two studies are shown in Table 24. As expected, there are some considerable variations from one course area to another in the number of monographs considered relevant, and similar large variations between the two methods of estimating the number of relevant items for a course area. The subjective nature of any procedure involving selection from bibliographic references, which give little indication regarding the content of a work other than the general title of the works, is obvious, and it is perhaps surprising that even greater differences were not arrived at. All the recommendations are of a similar order of magnitude - if we accept that the 'social sciences' course is in fact an amalgamation of three separate major study areas, each of which requires a similar rate of acquisition. There was an obvious tendency of the project team to recommend more titles per course area than were recommended by lecturers involved in the course. In at least two course areas - architecture and chemistry, this appeared to be partly because of the fact that lecturing staff were unaware of some course units taken by students, particularly those given by lecturers from outside the department in which most of the teaching in the course was situated. On the other hand, we find it difficult to explain the wide difference in the recommended levels of acquisition for the sociology course.

However, the results suggest that if each course area is considered as independent, at the rate of publication in 1972 and 1973, a desirable average level of acquisition per course area, of material listed in the Australian and British National Bibliographies, would be 400-500 titles.

As with the recommendations for basic monograph collections, it needs to be recognised that courses overlap in their use of monographs. The overlap in titles recommended for the various course areas was therefore investigated and the

TABLE 24

NUMBER OF TITLES LISTED IN ANNUAL ISSUES OF AUSTRALIAN AND BRITISH NATIONAL BIBLIOGRAPHIES CONSIDERED RELEVANT TO SIX COURSE AREAS

	Accounting	Architecture	Chemistry	Mechanical Engineering	Pharmacy	Social Sciences
Average Number of Titles Recommended by Lecturers from One Year's Issues of Each Bibliography	473	376	268	514	342	436 (a) + 396 (b) + 345 (c)
Average Number of Titles Recommended by Project Team from One Year's Issues of Each Bibliography	477	565	448	451	319	535 (a) + 426 (b) + 654 (c)

Note: The Social Sciences results contain figures recommended for majors in economics (a), politics (b) and sociology (c) respectively.

results are outlined in Table 25. As expected, since the course areas chosen were selected from different broad areas of study, the overlap between non-related subjects is very small. Nevertheless, the results indicated a very considerable rate of overlap of titles between some courses which clearly have various basic studies in common, such as accounting and economics, or chemistry and pharmacy. In a multidisciplinary college, or even in a monovocational college with several related course programmes within a single broad field, it is likely that almost every course programme will have at least one other course with which it overlaps to a substantial extent in its use of library materials. Very few colleges offer only a single programme within, say, engineering, or applied science, or art and design, and in general we may expect substantial overlapping use of both monographs and serials by students studying different programmes. Nevertheless, we should expect a greater average degree of overlapping use of materials in large multidisciplinary colleges with a wide range of programmes offered than in smaller colleges with fewer courses, and we have tried to make allowance for this likelihood in our calculations below.

Clearly, for expressing a suitable level of current acquisition of titles on a per-course basis, it is the rate of overlap between closely related subjects that must be delineated. Following on the results arrived at above, the

TABLE 25

SIGNIFICANT OVERLAP OF ITEMS IN 1972/1973

A.N.B. AND B.N.B. RECOMMENDED FOR DIFFERENT COURSES

Courses Overlapping	As Average Percentage of Total Items Recommended for Each Field
Accounting/Social Sciences	19.1%
Chemistry/Pharmacy	19.9%

Note: In no other case was overlap more than 5%, with the original six course areas.

project team therefore proceeded to assign classification numbers and then select items from the two bibliographies, in the same manner as described above, in relation to the W.A.I.T. courses in civil engineering, electrical engineering, physics, management, and medical technology with the aim of further studying overlap between the course areas electrical engineering/mechanical engineering/civil engineering, chemistry/physics, pharmacy/medical technology, and accounting/management. The results are illustrated in Table 26.

TABLE 26

OVERLAP OF ITEMS IN 1972/1973

A.N.B. AND B.N.B. RECOMMENDED FOR DIFFERENT COURSES

Course Areas	Overlap as Average Percentage of Total Number of Items Recommended for Each Field
Accounting-Management	31.4%
Civil Engineering-Mechanical Engineering	23.6%
Electrical Engineering-Mechanical Engineering	26.2%
Chemistry-Physics	14.1%
Medical Technology-Pharmacy	25.7%

The results in Table 26 are averages for each of the two courses involved, but the extent to which one course draws on the material of another is of course not the same in each direction. For example, pharmacy courses draw quite heavily on basic material in chemistry, but chemistry courses draw little upon the 'core' material relating to pharmacy. So that, although the total overlap between the two subjects is relatively high, as far as a library was concerned, the need for new monographs arising would be much greater on the introduction of a chemistry programme where the college already offered a pharmacy programme, than it would on the introduction of a pharmacy programme where a chemistry programme already existed. On the other hand, high overlap between two course areas may also be fairly equal because both courses draw on the same material from a third subject area - as in the case of medical technology and pharmacy courses, where the overlap occurred largely in relation to basic monographs on human biology and physiology.

There is nothing new in these results, as it has long been known from citation studies (e.g.[4]), that some subject areas contribute much to other areas of study, whilst others contribute little, but draw heavily on work in other fields. As far as our recommendations for libraries are concerned, there is little we can do other than work in terms of averages, since it is impossible to foresee the order in which courses may be introduced into colleges. However, college administrations should take into account these factors, in their decisions on the introduction of new courses, particularly in colleges which are relatively weak in library resources.

The results in Tables 25 and 26 suggest that in colleges which offer a range of course programmes in related subject areas, overlapping use of monograph titles by students and staff engaged in different course programmes may well be on average, of the order of 35% (comprising perhaps 25% overlap between the two most closely related, and a further 10% with other, programmes). This is a speculative estimate, based on very little data. However, an examination of a large range of C.A.E. handbooks suggested that students engaged in one course programme or major option typically undertake between 20-40% of individual course units in common with students of other programmes. (The total range is larger than this - from 0% to about 80%, but a high proportion of courses fall into the narrower band referred to.)

Some check on these findings was provided by the results received from the random sample of W.A.I.T. teaching staff who scanned monthly issues of the A.N.B. and B.N.B. as described on page 111. Although there were considerable variations in the number of items considered relevant by individuals in any particular issue, overall, the staff marked 1.23% of the B.N.B.

items and 1.47% of the A.N.B. items that they scanned, as being relevant to the major programme with which their teaching interest lay. 1.23% of the B.N.B. items published in one year amounted to 395 titles in 1972 and 398 titles in 1973. Similarly, 1.47% of the A.N.B. items amounted to 57 titles in 1972 and 84 titles in 1973, giving a total of 452 titles and 482 titles for the two years respectively. These figures are very much of the same order of magnitude as for the six programmes studied in detail, as shown in Table 24, and very close to the average arrived at on page 112, which suggests that the six programme areas are reasonably representative of the W.A.I.T. courses as a whole, for library purposes. This still does not mean, of course, that they are representative of all courses in C.A.E.'s, but since W.A.I.T. has a wider range of three-year programmes than any other C.A.E. except R.M.I.T., we suggest that the number of titles arrived at may well represent a reasonable average level of provision for these courses in all C.A.E.'s.

We feel justified in concluding that overlap may reduce the required current acquisition of A.N.B./B.N.B. listed titles for independent course programmes by 35%, to a figure of between 260-325 titles per year, given an annual rate of publication at the 1972-73 level. However, if only 75% of monograph acquisitions by colleges was covered by those two bibliographies, as suggested on page 110, this would indicate an overall acquisition rate for monographs per course programme of between 350 and 435 titles per annum.

Replacement Level Approach - Design of Study

A second, completely different, approach to the problem of estimating a suitable level of current monograph acquisition was undertaken by considering the level of acquisition in terms of the need to replace monographs in the collection which are no longer useful to the college clientele, because they have been superseded by newer material, and because the content of courses has been developed further.

As Line and Sandison have pointed out in their recent comprehensive review[5], a great many misleading statements have been made regarding the phenomenon of 'obsolescence', as apparently observed in studies of library use and citation practices over a period of years.

Much of the difficulty has been due to the failure of investigators to distinguish between the meaning of results based on synchronous and diachronous data*, and to base conclusions on inadequate samples of the items studied. Our own study falls prey to both of these shortcomings. For a college library estimating the rate at which its collection might need to be replaced, it is necessary to collect diachronous data on the use that is made of monographs in the collection. However, very few libraries are able to produce any data on use apart from that based on borrowing records, which may be significantly different, for individual titles, from use within the library. Nor are many C.A.E. libraries even able to produce records of borrowing of particular titles for more than a few years, if at all, as many loan systems in operation do not permit the borrowing history of a volume to be recorded. Within the resources and time limitations of the project it was clear that no diachronous study could be undertaken.

Virtually nothing has been published which gives any reliable data relating to the possible obsolescence of monographs of a level suitable for undergraduate study. Most obsolescence studies have been related to serial items and based on the study of published citations, which derive largely from research procedures. As Line has suggested, "Student monographs would certainly be expected to show a faster decline in use (than research materials), if only because new editions of worthwhile texts are constantly being published".[6] However, there is no firm evidence on this point, and little help can be gained from the results of published studies.

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* *Note:* Synchronous studies are made on records of uses or references at one point in time and compare the uses against the age distribution of the material used or cited.

Diachronous studies follow the use of particular item through successive observations at different dates.

In spite of these difficulties, the project team undertook an analysis of the publication dates of the monograph works recommended by lecturers which were used as the basis of the Document Delivery Tests described in Chapter 4, i.e. covering the course programme areas of accounting, architecture, chemistry, mechanical engineering, pharmacy and 'social sciences'. The results are shown in Table 27. A total of over 5,000 references were involved in the analysis.

Replacement Level Approach - Results

Table 27 indicates that very recently published monographs are recommended relatively little (the recommendations were made for 1974 courses), for the obvious reason that it takes some time for lecturers to become aware of new publications, to obtain and read copies themselves, and then to make sure copies are available to students (via the library or bookshops) before recommending them to students. It would appear that this process takes about 3 - 4 years. At first sight, this seems surprisingly long, and is certainly longer than the 'awareness time' revealed by studies of citation patterns in relation to research, but in the Australian context, where a high proportion of monographs are obtained from overseas, with relatively long supply times involved, the time period is perhaps not unexpected. Once this 'peak' of use is reached, of material 3 - 4 years old, older material gradually declines with age as a proportion of the total material used. The use of monographs more than twenty years old is negligible in nearly all the course areas investigated, although in architecture it did amount to 7.2% of the total.

The danger, as in all synchronous studies of this type, is in therefore concluding that a college should discard the great majority of its publications more than twenty years old. The distribution shown in Table 27 almost certainly underestimates the relative usefulness of older monographs, for two major reasons:-

(1) The number of monographs being published each year has increased fairly continuously over the period involved. This does not necessarily mean that the number of monographs relevant to each course area has

TABLE 27

DISTRIBUTION OF PUBLICATION DATES FOR MONOGRAPHS RECOMMENDED FOR SIX COURSE AREAS

	Accounting		Architecture		Chemistry		Mechanical Engineering		Pharmacy		Social Science	
1974	3.1%		1.7%		0.8%		0.8%		1.8%		2.0%	
1973	8.7%		4.2%		5.8%		3.6%		10.7%		7.0%	
1972	11.2%	33.6%	10.5%	29.4%	7.5%	26.0%	6.0%	26.6%	14.4%	48.4%	8.8%	30.4%
1971	12.3%		7.6%		10.0%		8.3%		14.8%		10.3%	
1970	10.1%		11.3%		8.5%		12.3%		19.2%		11.3%	
1969	12.0%		8.4%		7.0%		7.4%		11.4%		10.5%	
1968	6.4%		5.5%		9.4%		7.6%		5.5%		9.0%	
1967	4.5%	16.2%	6.7%	18.9%	8.3%	21.3%	8.7%	23.3%	3.0%	11.8%	5.2%	16.5%
1966	7.0%		5.9%		6.4%		7.6%		3.3%		6.9%	
1965	4.7%		6.3%		6.6%		7.0%		5.5%		4.4%	
1964	5.6%		5.9%		5.1%		4.0%		3.3%		3.8%	
1963	3.1%		5.0%		4.3%		4.9%		1.1%		3.1%	
1962	2.2%	6.2%	1.7%	7.6%	3.8%	9.4%	4.0%	8.5%	1.1%	4.1%	3.1%	6.7%
1961	2.0%		3.4%		3.2%		1.5%		1.5%		2.1%	
1960	2.0%		2.5%		2.4%		3.0%		1.5%		1.5%	
1955-57	1.1%		2.5%		2.1%		3.1%		0.6%		2.1%	
1950-52	0.3%		1.4%		1.1%		1.3%		0.2%		0.6%	
Pre-1950	1.1%		3.8%		2.1%		2.5%		0.0%		3.3%	

increased at the same rate, or as continuously. (There may well have been substantial variations from one year to the next for a single course area - which would help to explain some of the proportionate variations shown.) But we may be certain that, for example, the number of relevant monographs in each of the course areas published in 1972 was considerably greater than in 1952. If this is so, the proportion shown for each year would need to be 'indexed' by its relation to the overall amount of relevant publication in the year concerned to give a true comparison of the relative usefulness of items published in different years.

(2) All C.A.E. libraries have acquired a very high proportion of their total monograph collection from 1970 onwards (overall, between 70 - 80%). It is likely that these collections at the moment are more heavily biased towards more recently published material than they would be in the long term when their growth rate will be smaller - if only because older material is now often out of print. Since lecturers are likely to reflect in their recommendations, at least in part, what is available in the college library , it is likely that older material is under-represented.

Unfortunately, it is impossible to estimate accurately the extent of under-representation of older material caused by the factors described. Ideally one would need to know the size of the total 'universe' of monographs published each year from which lecturers in a course area are selecting, correct the proportions shown for each year allowing for these differences, and only then, estimate the rate at which monographs become less useful with increasing age.

An attempt was made to allow for the increasing volume of publication by applying weightings based on the total Australian and British monographic publication, as given by Barr in her review[7] of trends in book production, for the five three-year periods 1970-72, 1965-67, 1960-62, 1955-57 and 1950-52. These periods were chosen to reduce individual year variations and because 1970-72 appeared to be the publication

TABLE 28

AGE DISTRIBUTION OF RECOMMENDED MONOGRAEHS AFTER CORRECTION FOR GENERAL INCREASES IN RATE OF MONOGRAPH PUBLICATION

	Accounting	Architecture	Chemistry	Mechanical Engineering	Pharmacy	Social Science
1970-72	1.00	1.00	1.00	1.00	1.00	1.00
1965-67	0.58	0.77	0.98	1.05	0.29	0.65
1960-62	0.26	0.31	0.52	0.38	0.12	0.31
1955-57	0.06	0.15	0.15	0.21	0.02	0.13
1950-52	0.02	0.06	0.08	0.10	0.01	0.04

years of peak relative use for material being recommended in 1974.

As Table 28 shows, there are considerable differences in relative importance of older monographs to the various course areas. This makes it difficult to draw any broad conclusions regarding the rate at which undergraduate materials effectively become obsolete. Clearly, in most subject fields, there is a residual core of individual titles which do not become obsolete for a considerable length of time - if ever. This is consistent with the results of some recent studies of research materials use, but it is interesting that it also appears to be true, although to a smaller extent, in a college library situation. It appears from the figures in Table 28, that there is a relatively slow decline in use over the first five years after the peak use period, then a faster decline over the next five year period. Reasons for this would be purely speculative.

However, it seems likely that we might expect perhaps 10% of items acquired for a college library to remain of indefinite, or virtually indefinite, value for users, whereas the remaining 90% could be regarded as a little value after perhaps 20 years. Very few standards have attempted to determine in any way the extent to which a college library collection might need replacement with time. The Victorian Education Department standards define 'currently effective book stock' as material not more than 10 years old,[8] but in the absence of any reasoning, it is difficult to believe that this was anything other than a 'nice round figure' plucked out of the air, although it may well intuitively seem of the right order. Such a definition would imply replacement at the rate of the acquisition rate for monographs acquired ten years previously - which is not the same as 10% of total bookstock, if the collection has been increasing in size. Our figures suggest that a significant proportion of a college library's collection has an 'effective life' longer than 10 years, and that the average loss of utility is more likely to be of the order of 4.5% per year (90% over 20 years).

To this would need to be added replacements necessary because items are stolen or otherwise permanently lost, and because of physical destruction. Both these factors are likely to be reasonably small in any one year - although monographs do require replacement for these reasons, in many cases it will not be considered worthwhile to replace the title concerned because it has been superseded, or is of marginal utility. An average annual physical replacement factor of ½% seems reasonable. (In practice, it is likely that replacement because of loss would occur mainly in the early years of a monograph's potential library 'life', and replacement because of physical damage in later years.) This would amount to a necessary 'physical' replacement of 10% of all items acquired, over a twenty year period.

Conclusions

The replacement approach suggests to us that an absolute minimum level of current acquisition needed to update a C.A.E. library collection is approximately 5% of the collection per annum. However, this figure makes no allowance for any increase in the rate of publication relevant to a course area. Estimates of this growth vary, but Barr's long term figure of 3% per annum[9] is likely to be as accurate as any other. This would suggest an overall necessary growth rate for a monograph collection of 8%.

Our current publication approach study described above suggested an acquisition level of between 350 and 435 titles per annum per course programme. A level of 400 titles per course area represents 14.5% of the basic level of monograph provision per undergraduate course area proposed in Chapter 4. However, that provision was based on a minimum availability level for material of 60%, and a similar standard of provision would imply a minimum annual acquisition per course area of 240 titles (60% x 400). This would apply in the smallest colleges, and would amount to 8.7% of the retrospective allocation for each course area, irrespective of student numbers. If this percentage were applied to the basic monograph recommendation arrived at as a result of the application of the formula recommended on pages 101-102, it would allow colleges with larger student numbers to adequately update their overall collection, including necessary duplication.

We were surprised that two such different methods of arriving at a quantitative figure for a desirable level of current monograph acquisition should result in levels (8% and 8.7%) so close in terms of our recommended total monograph collection size. Whether this is largely coincidental is hard to say, as our reasoning must be regarded in part as having a weak basis. However, the closeness of the two figures gives us some confidence that our recommendation below is of the correct order of magnitude.

RECOMMENDATION 5. That college libraries acquire per annum a total number of monograph volumes equal to 8% of the total arrived at by application of the formula in Recommendation 3. This percentage is additional to any increase necessary to bring the college's collection up to the total arising from the application of Recommendation 3, and is to be regarded as the minimum level of current acquisition necessary for a collection to maintain its existing position relative to the basic standards for adequate service to college communities.

Examples of the application of this formula to five college libraries in 1975 are given in Appendix 2.

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CHAPTER 6

PROVISION OF SERIALS

Introduction

The problem of serial provision has been dealt with separately for the reasons given on page 74. The provision of serials in tertiary libraries has become an increasing problem, as the number of serials in all subject fields, and the average size of existing periodicals, has become very much larger.[1] Correspondingly, the price of serials has risen very fast, as the annual surveys in *'Library Journal'* and the *'Library Association Record'* have shown. Increasingly it has become clear that no library, other than perhaps a National Library, can itself hold all the periodicals of interest to its clientele - it can hope only to meet the majority of its own readers' demands from its own resources, and supply the remainder via a local, state or national network.

At the same time, there is evidence from overseas that the continuing nature of the serial commitment has tended to force academic libraries to spend an increasing proportion of their funds for library resources on serials. To some extent this has been obscured in C.A.E.'s by the special Commonwealth funds for retrospective collection building, most of which has been allocated to the buying of monographs, but in spite of this, the proportion of the collection budget spent by multi-discipline colleges on serials rose from 26.9% in 1974[2] to 31.4% in 1975[3]. As special Commonwealth funds are phased out, we may expect C.A.E. libraries to be faced with increasing pressure caused by their desire to maintain current subscriptions to their existing serial titles, possibly at the expense of monograph holdings. Since most use studies conducted in tertiary libraries have revealed that undergraduate criticisms of a library collection are invariably levelled at lack of monograph provision rather than lack of serials (e.g.[4,5]), we feel that it is necessary to examine carefully the need for serials in C.A.E. libraries.

The many published studies of periodical use and citation patterns suggest that the majority of periodical items sought in any subject field come from a relatively small number of periodical titles, even when research workers are involved. It was suspected that for undergraduate learning and teaching, a high level of adequacy might be achieved with a relatively small range of periodical titles. Even though changes in teaching method leading towards more individual project work by students may well be narrowing the gap between traditional student demands for periodicals and those of research workers, it is still likely that few undergraduate C.A.E. students are ever in the situation of requiring all items on a topic, which may involve obtaining some esoteric titles, rather than merely a few relevant and/or up-to-date periodical articles - which may be supplied from a much narrower range of periodicals.

Intrinsically, one might expect that it would be necessary to provide a higher level of local availability of monographs than of serial items in a college library, since there is evidence that lecturers use a greater proportion of serial items relative to monographs than do undergraduate students because of their need to keep up to date, and as we suggested in our literature review, lecturers and research workers tend to have available a longer time span in which supply of a document is acceptable than do students, who have a continuous flow of different assignments. This opinion has been given some solid support by a very recent paper by Stuart[6] who studied the acceptibility of delay times resulting from readers waiting for material already on loan from a university library. Delays in supply were shown to adversely affect undergraduate students four times as often as for teaching staff and the maximum acceptable delay was more than twice as long for staff as for undergraduate students. This means that inter-library loan is likely to be an acceptable substitute for local ownership relatively more often in the case of serial items than for monographs. Also, although we have no strong evidence on this point, the results of a small-scale sample survey of inter-library loan supply times suggest that serial items may be obtained through inter-library loan services more quickly than monographs. This is not surprising, since periodical articles are often supplied in the form of photocopies, not requiring parcel posting, and, since very few libraries lend their serials, the likelihood of a serial item being unavailable at the lending library is much lower than for a monograph - where both are known to be owned by the library asked to supply the item. The existence of printed national union catalogues and other location lists for serials, available in all C.A.E. libraries, also reduces the average supply time for periodical articles as compared with monographs.

Problems of Definition

The fact that we have used both the word 'serial' and 'periodical' in this chapter so far indicates an initial problem faced in any assessment of provision in this area. In our assessment, we are using the term 'serial' to cover any non-monograph printed material, as defined on page 71. However, we are aware that different definitions exist and that the Commission on Advanced Education's current statistics make no distinction between 'serial' and 'periodical'. We believe that our recommended definitions in Chapter 3 should be followed for statistical reporting purposes, if comparisons from college to college, and with any recommended standards, are to be made. Approaching the problem of serial provision, we have considered it worthwhile to distinguish between periodicals and serials, because of the problems of definition of a serial, and because college library practices differ in their treatment of serials, but rarely do so as regards the narrower group of periodicals (e.g. a reference annual might be purchased every year by a larger college library and considered as a serial, but only every three or four years by a smaller library which may then treat each issue as a monograph). As we suggested in Chapter 3, we suspect that the apparent position of college libraries in regard to the periodical provision, in which most libraries exceed the 'Wark' standards (often by a considerable extent), results from the fact that colleges' holdings statistics and the standards have different bases of definition.

Research Design

The references supplied by college lecturers as recommended to students in the courses in which they were involved, from which samples were drawn for the Document Delivery Tests described in Chapter 4, also contained significant numbers of references to serial items. However, when these references were analysed, the number of periodical titles from which articles were recommended for any course area was found to be relatively small, except in the area of social science, as shown in Table 29.

TABLE 29

NUMBER OF PERIODICAL TITLES FROM WHICH ARTICLES WERE RECOMMENDED TO STUDENTS, IN SIX COURSE AREAS

Accounting	Architecture	Chemistry	Mechanical Engineering	Pharmacy	Social Science
68	62	44	26	27	247

This had been anticipated in our study design, as conversations with college librarians and teaching staff had suggested that the range of periodical titles required by a college library for course purposes is determined primarily by the requirements of lecturers in the preparation of class material and keeping up to date with their fields of expertise, rather than by students in pursuit of study materials. (One of the authors has also suggested elsewhere[7] that this may have led to more investment in serial provision than is dictated by the best interests of the whole college community, since lecturers may be able to exert more pressure on library purchasing policy than students, whose needs are more often met by monographs. However, this is speculative.)

All lecturers who were contacted in order to supply details of material recommended to students were, therefore, also asked to supply details of the current journal titles that they found to be useful, and read, in connection with their undergraduate teaching (i.e. as opposed to solely for personal research purposes, although in most cases it would be impossible for individuals to make a clear distinction between the two kinds of usage). The staff concerned were asked to list titles used, regardless of the source from which they obtained the periodicals, which would not necessarily be held by their college's library. In fact, a number of lecturers specifically stated in their replies that their college library had been unable to subscribe to some of the journals listed. These they had been forced to obtain from private sources or, in some cases, scan at a nearby university library.

The definition of a 'journal' title was left deliberately broad so that respondents would not be inhibited from including any kind of serial material, and the word 'journal' itself was used in correspondence with teaching staff, as preliminary inquiries had suggested that this was the term most used by the staff themselves to describe what librarians tend to refer to as periodicals. However, in the tables which follow, the statistics of titles held relate only to periodicals in the sense we have defined on page 70, i.e. they exclude annual publications, monographs in series, publishers' series, and looseleaf or card-form serial services. All bibliographical periodicals such as abstracting and indexing journals, contents-listings and serial bibliographies were also excluded arbitrarily from the replies received, since it was considered that provision of these serials needed to be dealt with separately. Very few replies in fact included bibliographical serials, but they would certainly be needed in any C.A.E. library for literature searching purposes.

The periodical titles listed by teaching staff were collected together in each of the six course programme areas studied in the Document Delivery Tests, i.e. accounting, architecture, chemistry, mechanical engineering, pharmacy, and social sciences. However, in order to study the likely overlapping use of periodical titles by lecturers in related course areas, replies were also solicited and received from staff teaching undergraduate programmes in civil engineering, electrical engineering, management, medical technology, pharmacy and therapy.

Current Periodical Titles and Teaching Staff Reading

In the case of the six course areas in which the periodical titles recommended by lecturers to students were also collected, the expectation that the lecturers' personal reading would prove to cover a wider range of titles than those recommended to students was found to be justified, as can be seen by comparing Table 30 with Table 29.

TABLE 30

NUMBER OF PERIODICAL TITLES RECOMMENDED BY LECTURERS AS USEFUL FOR TEACHING PURPOSES, IN TWELVE COURSE AREAS

Accounting	Architecture	Chemistry	Civil Engineering	Electrical Engineering	Management	Mechanical Engineering	Medical Technology	Pharmacy	Physics	Social Science	Therapy
116	140	138	141	193	286	204	233	184	129	417	227

In no case was a significant number of individual article references for students made to any current periodical title not included in the list of titles read by the lecturers themselves. This does not imply that students requirements for periodicals are likely to be limited solely to titles from which items are recommended by their lecturers. Students engaged on individual projects or assignments would be expected to go well beyond a range of lecturer's recommended articles. However, the number of titles found useful by lecturers are so much greater than the figures shown in Table 29, and the range of individual titles referred to is so much wider in scope, that we judge the more comprehensive lists of periodicals useful to lecturing staff to provide a good basis for measuring periodical collection adequacy in a C.A.E. library, for both students and staff.

However, since only current titles are read by lecturers on a continuing basis, such lists can be used only to survey the current periodical coverage of a library - they cannot suggest anything regarding the problem of necessary back runs of periodicals. For teaching and study purposes, however, the use of periodical literature in most C.A.E. courses is likely to concentrate on more recently published material. Some evidence for this is provided later in this chapter. In any case, if current periodical subscriptions are maintained, the problem of provision of back runs of most titles solves itself to a large extent after some years, as back runs are built up automatically. This is not to ignore the necessity of providing back runs of serials when new colleges or courses are established, and we discuss the problem below, but the establishment of a desirable level of current title coverage appeared to us to be more significant.

The main advantages of using periodical lists compiled from titles recommended by lecturers as a basis for assessing collection adequacy were:-

(a) They are up-to-date, and the titles are known, at least in the subjective view of teaching staff, to be useful in the Australian C.A.E. context of study.

(b) The structure and variety in range of titles used by different lecturers could be studied.

It would have been possible, as with the tests of monograph holdings, to use already compiled lists of periodical titles. However, published lists are invariably non-selective, and if selective, not designed for Australian needs. The many published ranking lists of 'most-used' or 'most-cited' titles, arising from studies of citation or inter-library loan patterns, are largely based on research requirements, and not particularly relevant to the undergraduate teaching situation, in which the review journal, the 'news' journal, and the educationally-oriented journal play a much greater relative part.

The recommended titles for each course area were collected together into a single list as a test mechanism. However, the individual replies are worthy of some comment also. In each course programme area, there is a fairly small number of 'core' periodicals which are referred to by the majority of lecturers. However, the size of the 'core' varies from course area to course area, and the relative 'scatter' of useful periodicals varies from course to course, as could be predicted from Bradford's original findings[8], and the extensive number of periodical use studies since then. Some course areas are relatively compact in their requirements for periodicals, e.g. accounting, while in other course areas, such as mechanical engineering, a much wider range of titles is considered relevant, with much less agreement amongst lecturers as to the usefulness of particular titles. The situtation is complicated by the fact that some course areas in C.A.E.'s are clearly conglomerate in structure, whilst others are relatively specialised. In the social science programme, for example, as we found in relation to monograph provision, the area could be fairly sharply divided into its three component fields of economics, politics and sociology, and the majority of lecturers seemed to read only periodicals in their speciality, e.g. only economics periodicals, or only sociological ones. For this reason, the total number of titles recommended was much larger in the social science area than for other courses, as the total was essentially a combination of three 'major' course requirements, overlapping only to a small extent.

The number of titles found useful by individual lecturers varied considerably, from one or two titles up to a maximum of 63. The form provided for replies permitted only 40 titles to be recorded (see Appendix 4), and in a small number of cases this inhibited further titles being listed. However, we believe that there was no serious understatement involved in total. Although there was this considerable individual variation as regards the numbers of titles listed, even in the case of lecturers specifying a very small number of titles, there was a tendency for at least one unique title to be listed (i.e. 'unique' in the sense of not being listed by any other respondent). It appears that individual lecturers invariably have some area of special interest within their broad teaching field, which will have one or more periodicals relevant to it - of overall minority interest, but nevertheless very useful to the individual lecturer. This is important, because it indicates that no simple specification of 'x periodicals per course area' is a quantitative solution. Where course areas have more lecturers involved, there will be a corresponding need for a wider range of periodical provision, if lecturers' individual interests are to be catered for - as they surely must be if teaching staff are to be able to develop areas of expertise, of benefit to both their teaching colleagues and to students. Table 31 illustrates the extent to which individual lecturers tended to specify unique periodicals.

Weighting of Periodical Titles for Test Purposes

Each title specified for a particular course area was given a 'weighting' according to the number of times it was listed by various lecturers. The rationale behind this procedure derives from the probability that those periodicals referred to by a greater number of lecturers will tend to be those that will receive a greater use in college libraries. It would be difficult for us to claim that the pattern of use of titles in any particular college would be exactly as reflected by the weightings applied in this study. It is likely that the weightings applied under-estimate the concentration of use which is placed on particular titles:-

(a) Since lecturers' recommendations to students form a subset of the full range of titles found useful by lecturers, and that subset largely comprises the titles most often listed by lecturers, student use of periodicals in college libraries is likely to be concentrated on fewer titles than are used by lecturers.

(b) Replies were not received from all lecturers in course areas. Although, as we have stated, unique titles were listed by almost all lecturers, as more replies were received, the proportion of unique titles to the total listed in a course area declined. The figures in Table 31 also suggest that for course areas in which a greater number of lecturers were involved, and responded, fewer unique titles were referred to on a per capita basis. The 'core' heavily-used titles tended to be repeated by a high proportion of lecturers, and given a 100% response an increased weighting of these titles could have been expected.

TABLE 31

PERIODICAL TITLE RECOMMENDATIONS OF C.A.E. LECTURERS IN TWELVE COURSE AREAS

	Accounting	Architecture	Chemistry	Civil Engineering	Electrical Engineering	Management	Mechanical Engineering	Medical Technology	Pharmacy	Physics	Social Science	Therapy
Number of Lecturers Replying	83	32	73	82	53	74	58	35	29	65	59	58
Total Number of Periodical Titles Listed	118	145	145	141	193	286	204	233	184	129	418	227
Average Number of Periodical Titles Listed by Each Lecturer	8.4	9.5	8.4	7.0	22.1	10.2	9.9	17.6	17.1	8.1	18.1	14.4
Average Number of 'Unique' Titles Listed by Each Lecturer	0.4	3.5	1.0	0.7	2.6	2.9	2.5	5.7	5.3	1.0	6.1	2.9

Tests of C.A.E. Current Periodical Holdings

The lists of periodical titles compiled were then checked against the current holdings of periodical titles in over 20 college libraries, for course areas which were offered by the colleges which the libraries served. 'Current holdings' were taken to mean titles to which the library had placed a current subscription in 1975, whether or not the first issues had actually been received at the time of the check. The check of holdings was carried out by the Project investigators at the Ballarat Institute of Advanced Education*, Gippsland Institute of Advanced Education, Lincoln Institute, Royal Melbourne Institute of Technology, and the Western Australian Institute of Technology. The checks at the other colleges were carried out by library staff at those colleges, and the results must be treated with some caution. It is possible that the figures of holdings from some libraries may slightly under-represent the true situation, as, without being able to apply the stringent checks used by the Project investigators, it is likely that a few titles would not be recorded as held, even though this was the case, because the form of a title used by the library concerned differed from the way in which it was referred to in the list supplied for checking. However, this under-representation is considered to be very small.

Tables 32A to 32D show the results of the checks carried out in the various colleges. The proportion of listed titles held for each course area was calculated on both an unweighted and weighted basis. The results indicated wide variations in the level of provision in colleges which offer undergraduate courses in the areas concerned. Not surprisingly, the larger colleges tended to hold a higher proportion of titles for course areas as a whole, on both an unweighted and weighted basis, but this was by no means always the case for a particular course area, where the holdings of some of the smaller colleges occasionally showed up very favourably compared with some of the larger metropolitan colleges, e.g. Accounting at Riverina, or Chemistry at Ballarat. This was particularly true for comparisons on a weighted basis, suggesting that a relatively small, but well-chosen collection of

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*_Note:_ Now amalgamated with the State College of Victoria, Ballarat to form the Ballarat College of Advanced Education.

TABLE 32A

HOLDINGS OF CURRENT PERIODICALS LISTED BY LECTURERS IN 24 C.A.E. LIBRARIES

Name of College	ACCOUNTING			ARCHITECTURE			CHEMISTRY		
	Total Titles Listed = 118 Weighted Total of Titles Listed = 698			Total Titles Listed = 145 Weighted Total of Titles Listed = 303			Total Titles Listed = 145 Weighted Total of Titles Listed = 676		
	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis
Canberra C.A.E.	76	64.4	85.2	66	45.5	67.3	51	35.1	66.2
Cumberland C.H.S.									
Mitchell C.A.E.	55	46.6	68.1						
N.S.W.I.T.				72	49.7	67.9			
Riverina C.A.E.	70	59.3	86.2						
Ballarat I.A.E.	50	42.4	77.8				53	36.6	72.2
Bendigo I.T.	45	38.1	66.8				34	23.5	53.3
Caulfield I.T.	70	59.3	87.5				69	47.5	78.5
Footscray I.T.	71	60.2	83.4				47	32.4	66.2
Gippsland I. A. E.	43	36.4	63.3				32	22.0	57.9
Gordon I. T.				64	44.1	65.7			
Lincoln Institute									
Prahran C.A.E.	54	45.7	83.3						
Preston I.T.	57	48.3	79.9				27	18.6	49.0
R.M.I.T.	73	61.9	85.3	88	60.7	75.9	78	53.8	79.1
Swinburne C.T.	73	61.9	84.7				65	44.8	66.6
Victorian College of Pharmacy									
Warrnambool I.A.E.	53	44.9	66.0				39	26.9	57.4
Capricornia I.A.E.	55	46.6	75.9				32	22.0	44.8
Darling Downs I.A.E.	37	31.3	56.3				31	21.3	52.1
Queensland I.T.	77	65.3	80.9	77	53.1	71.9	93	64.1	86.3
S.A.I.T.	81	68.6	92.6	76	52.4	71.0	73	50.3	74.5
W.A.I.T.	88	74.5	91.4	106	73.1	84.8	105	72.4	91.7
Tasmanian C.A.E.	59	50.0	76.7	82	56.6	74.2	35	24.1	43.5

TABLE 32B

HOLDINGS OF CURRENT PERIODICALS LISTED BY LECTURERS IN 24 C.A.E. LIBRARIES

Name of College	MECHANICAL ENGINEERING			PHARMACY			SOCIAL SCIENCE		
	Total Titles Listed = 204 Weighted Total of Titles Listed = 576			Total Titles Listed = 184 Weighted Total of Titles Listed = 496			Total Titles Listed = 418 Weighted Total of Titles Listed = 1067		
	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis
Canberra C.A.E.							225	53.8	73.4
Cumberland C.H.S.									
Mitchell C.A.E.							157	37.5	58.0
N.S.W.I.T.									
Riverina C.A.E.							145	34.7	56.6
Ballarat I.A.E.	55	27.0	41.3				89	21.3	39.5
Bendigo I.T.	61	29.9	49.8				93	22.3	48.3
Caulfield I.T.	89	43.6	63.7				203	48.5	67.0
Footscray I.T.	72	35.3	57.1						
Gippsland I.A.E.	65	31.8	52.4				96	22.9	44.7
Gordon I.T.							161	38.5	63.6
Lincoln Institute									
Prahran C.A.E.									
Preston I.T.	45	22.0	47.0				111	26.5	48.3
R.M.I.T.	110	53.9	69.8				168	40.2	63.1
Swinburne C.T.	97	47.6	65.1				225	53.8	76.0
Victorian College of Pharmacy				72	39.1	67.7			
Warrnambool I.A.E.	42	20.6	25.6						
Capricornia I.A.E.	69	33.8	52.6						
Darling Downs I.A.E.	31	15.1	22.5						
Queensland I.T.	118	57.8	74.6						
S.A.I T.	111	54.4	69.3	48	26.1	48.4			
W.A.I.T.	123	60.3	77.6	119	64.7	82.2	265	63.4	80.5
Tasmanian C.A.E.	63	30.9	47.0	51	27.7	51.0			

TABLE 32C

HOLDINGS OF CURRENT PERIODICALS LISTED BY LECTURERS IN 24 C.A.E. LIBRARIES

Name of College	CIVIL ENGINEERING			ELECTRICAL ENGINEERING			MANAGEMENT		
	Titles Listed = 141 Weighted Total of Titles Listed = 577			Total Titles Listed = 193 Weighted Total of Titles Listed = 1169			Total Titles Listed = 286 Weighted Total of Titles Listed = 754		
	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis
Canberra C.A.E.							172	60.1	68.2
Cumberland C.H.S.									
Mitchell C.A.E.							138	48.3	63.3
N.S.W.I.T.	83	58.9	78.9	76	39.4	40.5	154	53.8	70.7
Riverina C.A.E.							124	43.4	57.7
Ballarat I.A.E.	51	36.2	74.5	47	24.4	43.4			
Bendigo I.T.	67	47.5	68.3	63	32.6	48.8	98	34.3	47.3
Caulfield I.T.	82	58.2	79.4	95	49.2	70.9	170	59.4	76.9
Footscray I.T.	68	48.2	78.5				134	46.9	58.2
Gippsland I.A.E.	50	35.5	72.3	54	28.0	54.0			
Gordon I.T.									
Lincoln Institute									
Prahran C.A.E.									
Preston I.T.	56	39.7	69.8	79	40.9	74.8	129	45.1	55.6
R.M.I.T.	95	67.4	86.6	146	75.6	94.1	166	58.0	74.0
Swinburne C.T.	80	56.7	80.8	120	62.2	87.9			
Victorian College of Pharmacy									
Warrnambool I.A.E.	38	27.0	37.6						
Capricornia I.A.E.									
Darling Downs I.A.E.	63	44.7	73.5	51	26.4	44.5	118	41.3	57.8
Queensland I.T.	104	73.8	90.6	109	56.5	88.0	176	61.5	74.5
S.A.I.T.	65	46.1	69.5	120	62.2	87.9	166	58.0	74.9
W.A.I.T.	83	58.9	84.4	135	69.9	89.1	210	73.4	83.8
Tasmanian C.A.E.	79	56.0	79.7	55	28.4	35.1	163	57.0	72.5

TABLE 32D

HOLDINGS OF CURRENT PERIODICALS LISTED BY LECTURERS, IN 24 C.A.E. LIBRARIES

Name of College	MEDICAL TECHNOLOGY			PHYSICS			THERAPY		
	Total Titles Listed = 233 Weighted Total of Titles Listed = 615			Total Titles Listed = 129 Weighted Total of Titles Listed = 525			Total Titles Listed = 227 Weighted Total of Titles Listed = 828		
	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis	Total Current Titles Held/ On Order	% Held of Total Titles Listed	% Held of Total Titles Listed on a Weighted Basis
Canberra C.A.E.				43	33.3	60.4			
Cumberland C.H.S.							156	68.7	84.1
Mitchell C.A.E.									
N.S.W.I.T.	123	52.8	71.2	77	59.7	81.5			
Riverina C.A.E.	42	18.0	38.0						
Ballarat I.A.E.				46	35.7	66.9			
Bendigo I.T.				38	29.5	57.3			
Caulfield I.T.				73	56.6	79.0			
Footscray I.T.				34	26.4	45.9			
Gippsland I.A.E.				92	71.3	68.8			
Gordon I.T.									
Lincoln Institute							114	50.2	80.2
Prahran C.A.E.									
Preston I.T.				34	26.4	45.9			
R.M.I.T.	48	20.6	39.0	82	63.6	88.2			
Swinburne C.T.				45	34.9	68.8			
Victorian College of Pharmacy									
Warrnambool I.A.E.									
Capricornia I.A.E.									
Darling Downs I.A.E.				34	26.4	51.4			
Queensland I.T.	123	52.8	72.5	87	67.4	86.1			
S.A.I.T.	27	11.6	27.0	73	56.6	79.6	67	29.5	57.6
W.A.I.T.	114	48.9	69.8	85	65.9	89.1	127	55.9	74.8
Tasmanian C.A.E.	35	15.0	29.9	36	27.9	61.1			

203

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periodical titles may well be able to meet a high proportion of the needs of users in colleges.

Nevertheless, it is generally apparent that in many of the smaller colleges of the proportion of titles held in many of the course areas considered is extremely low on an unweighted basis, and even on a weighted basis, cannot be regarded as satisfactory - with many holdings of under 50% of the listed titles. On the other hand, for many of the course areas in larger colleges, their libraries are able to provide periodical resources supplying over 80% or even 90% of the listed titles on a weighted basis, which suggests a most satisfactory situation in relation to normal teaching requirements. (We reiterate, however, that only current titles are being considered here - colleges with a satisfactory situation in current periodical provision may still have problems in supplying their readers with periodical articles because of inadequate retrospective collections.) For the reasons we gave on page 134, we believe that the weighting procedure we have adopted is valid for colleges as a whole, and that there are core periodicals which are useful to all colleges which offer courses in each area concerned. We consider that the weighted proportion of titles held by college libraries represents a much more satisfactory basis for estimating the practical adequacy of their periodical collection than does the simple checking of titles as though they were all of equal utility to the college. As we stated above, we suggest that the weightings given under-represent the concentration which occurs in practice, and therefore the recommendations we arrive at below will tend to place college libraries in a slightly more favourable position than might be suggested by the 'raw' availability levels shown in Tables 32A to 32D.

Test Results and Current Periodical Availability

The first problem to be considered in relation to the results obtained is the level of availability of periodicals which is both desirable and practicable to achieve in college libraries. To assist with this process, the results in Tables 32A to 32D are presented in a graphical form in Figures 1.3 to 1.13.

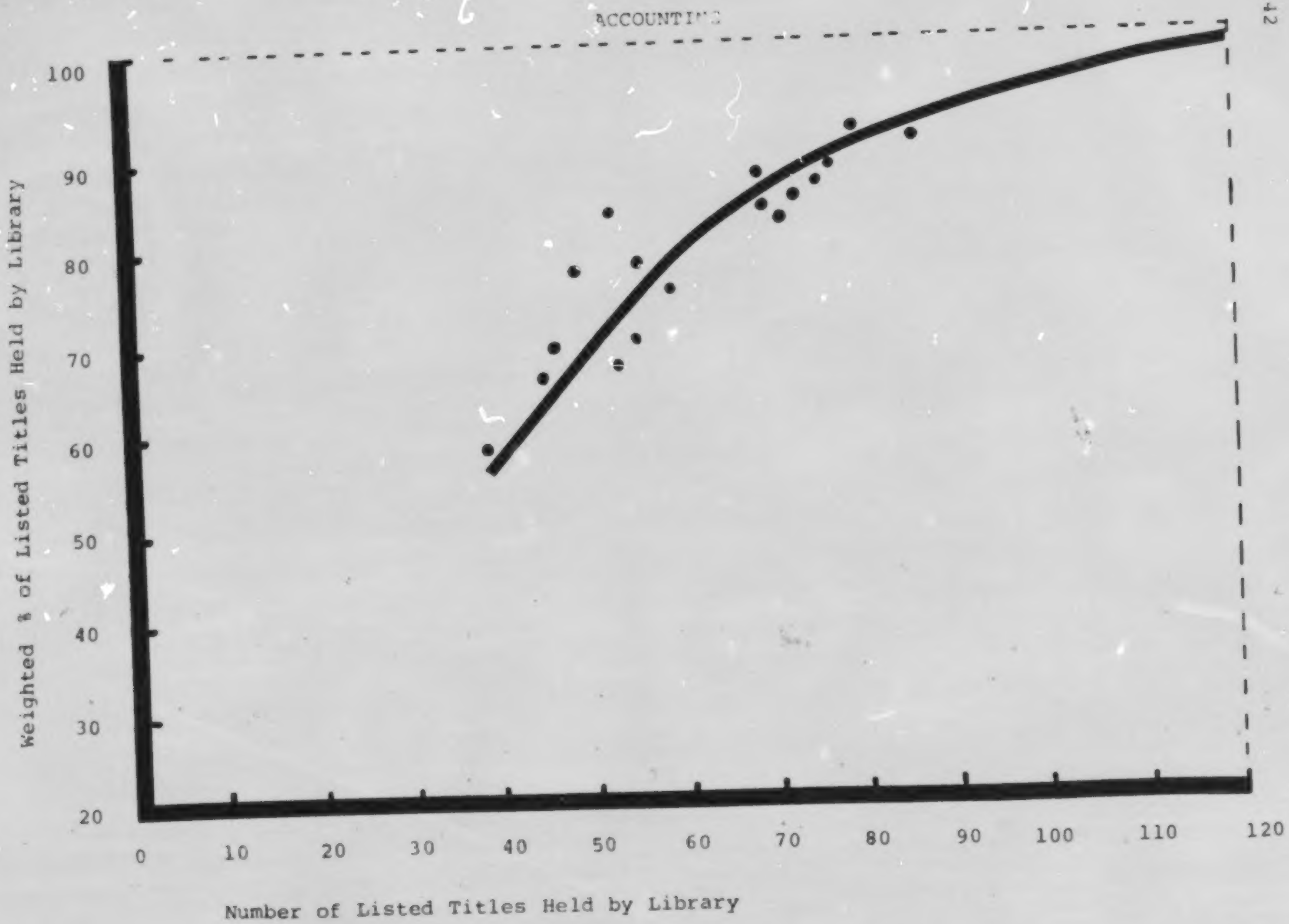


FIGURE 1.3

205

206

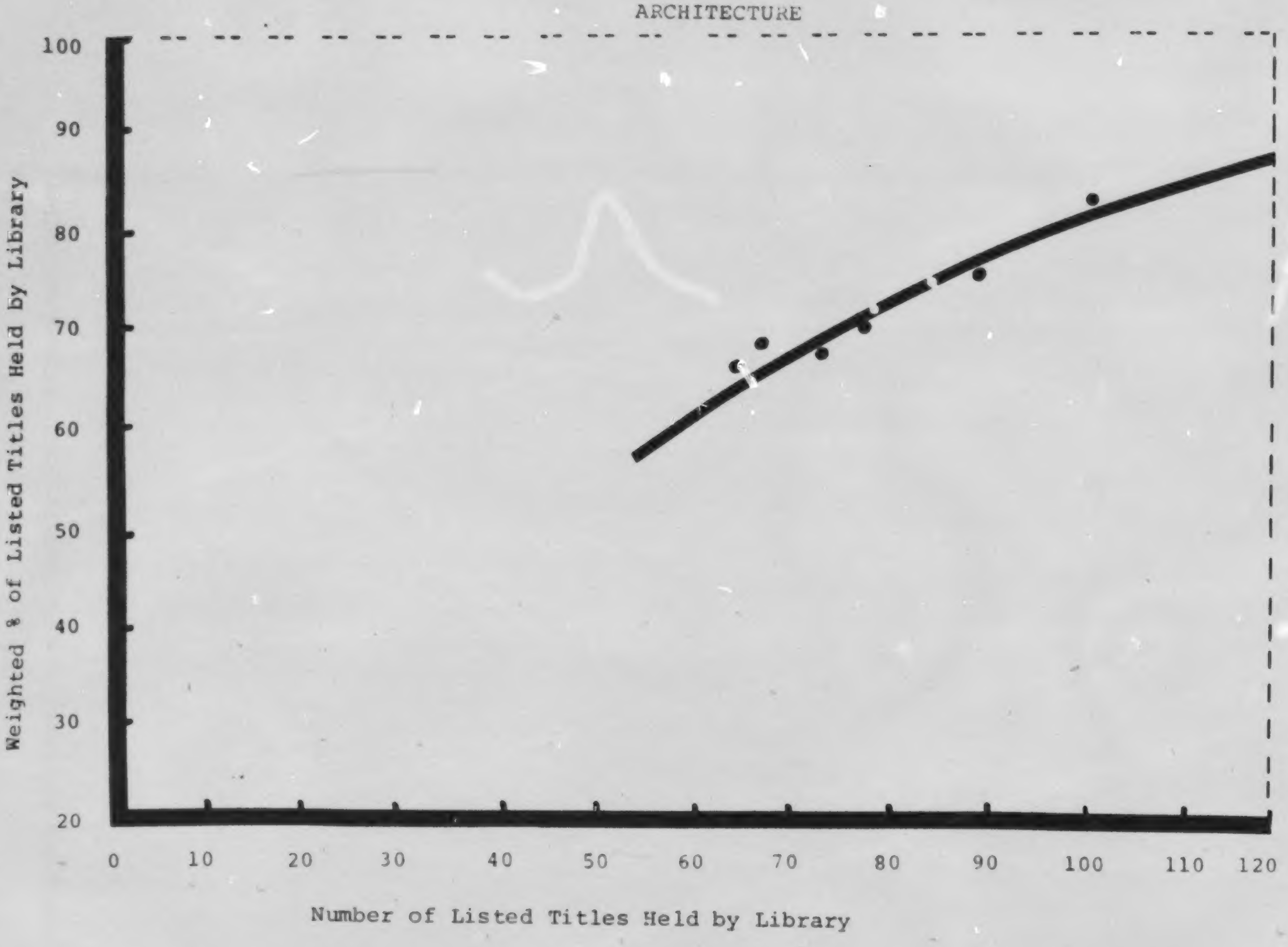

ARCHITECTURE
100
90
80
70
60
50
40
30
20
Weighted % of Listed Titles Held by Library
0
10
20
30
40
50
60
70
80
90
100
110
120
Number of Listed Titles Held by Library

FIGURE 1.4

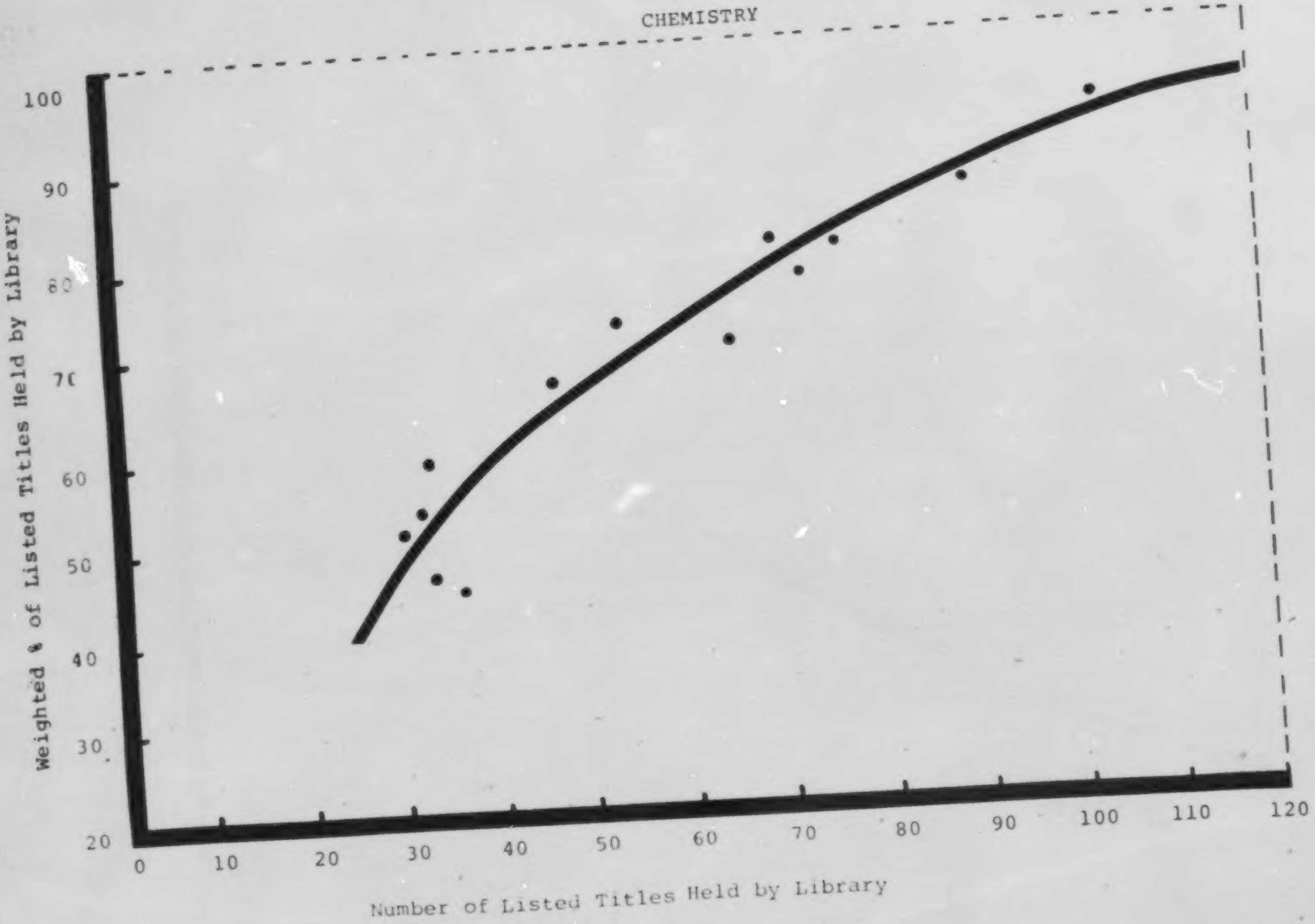
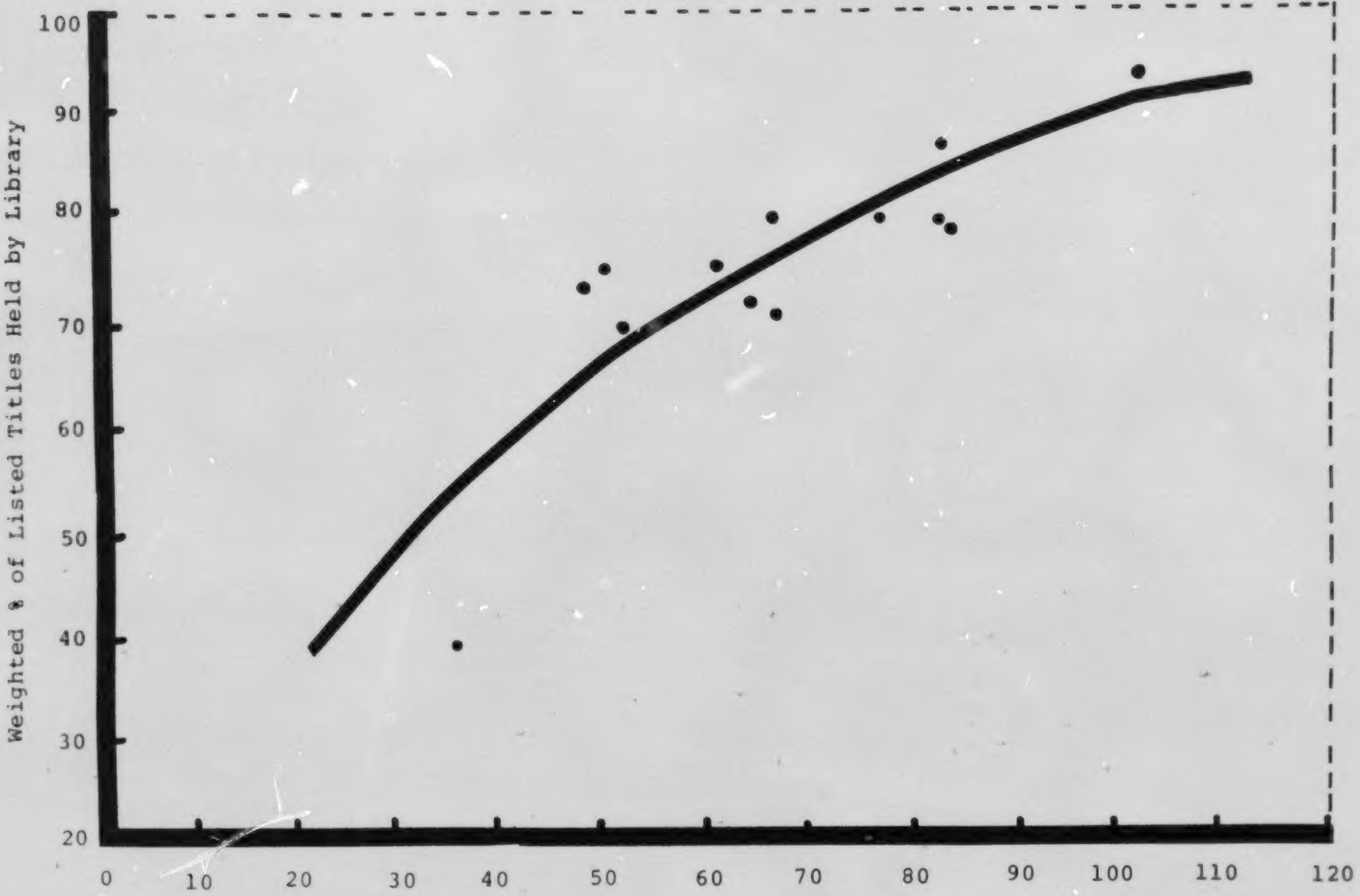

CHEMISTRY
Weighted % of Listed Titles Held by Library
100
90
80
70
60
50
40
30
20
0
10
20
30
40
50
60
70
80
90
100
110
120
Number of Listed Titles Held by Library

FIGURE 1.5

CIVIL ENGINEERING



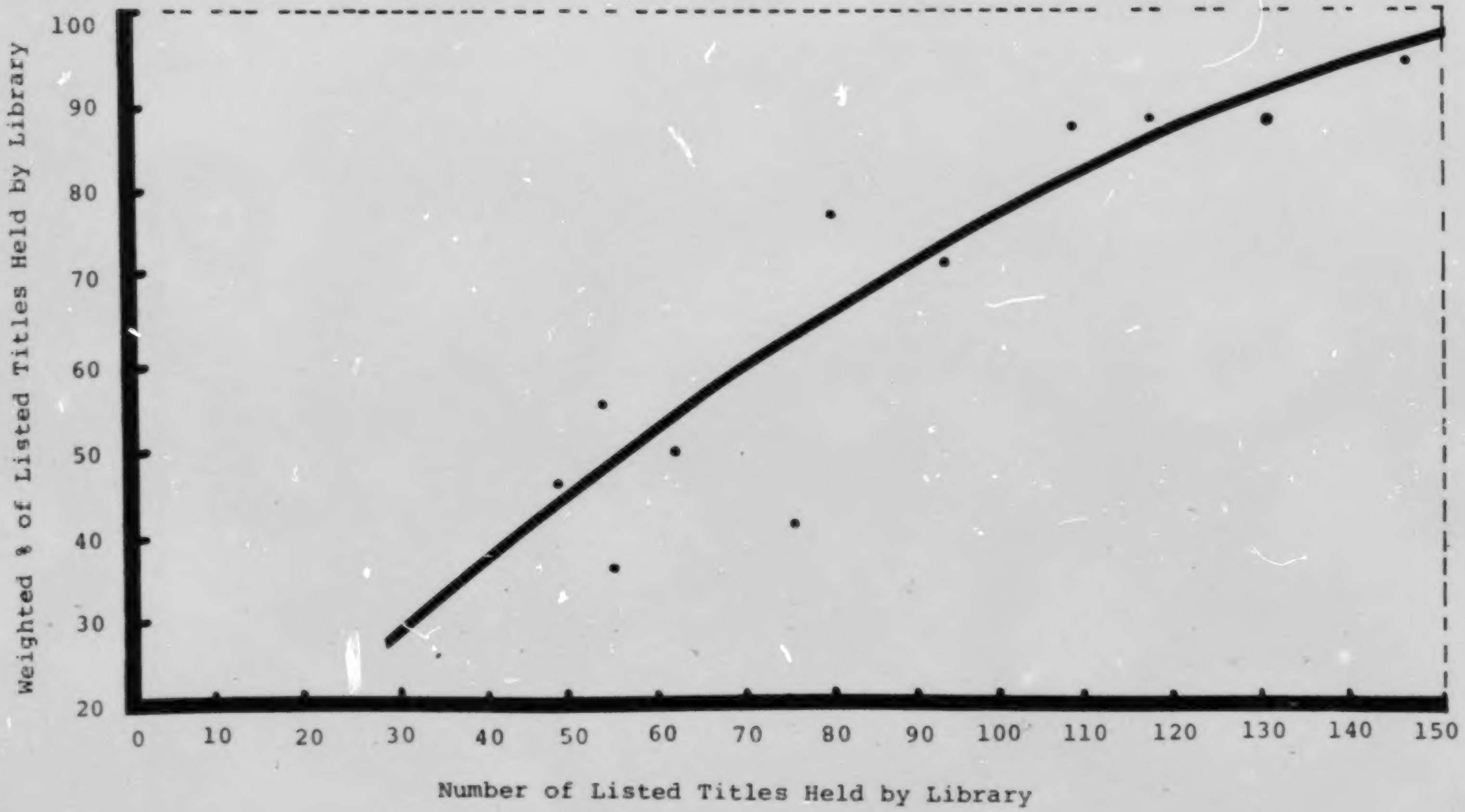
Number of Listed Titles Held by Library

211

FIGURE 1.6

212

ELECTRICAL ENGINEERING



214

213

FIGURE 1.7

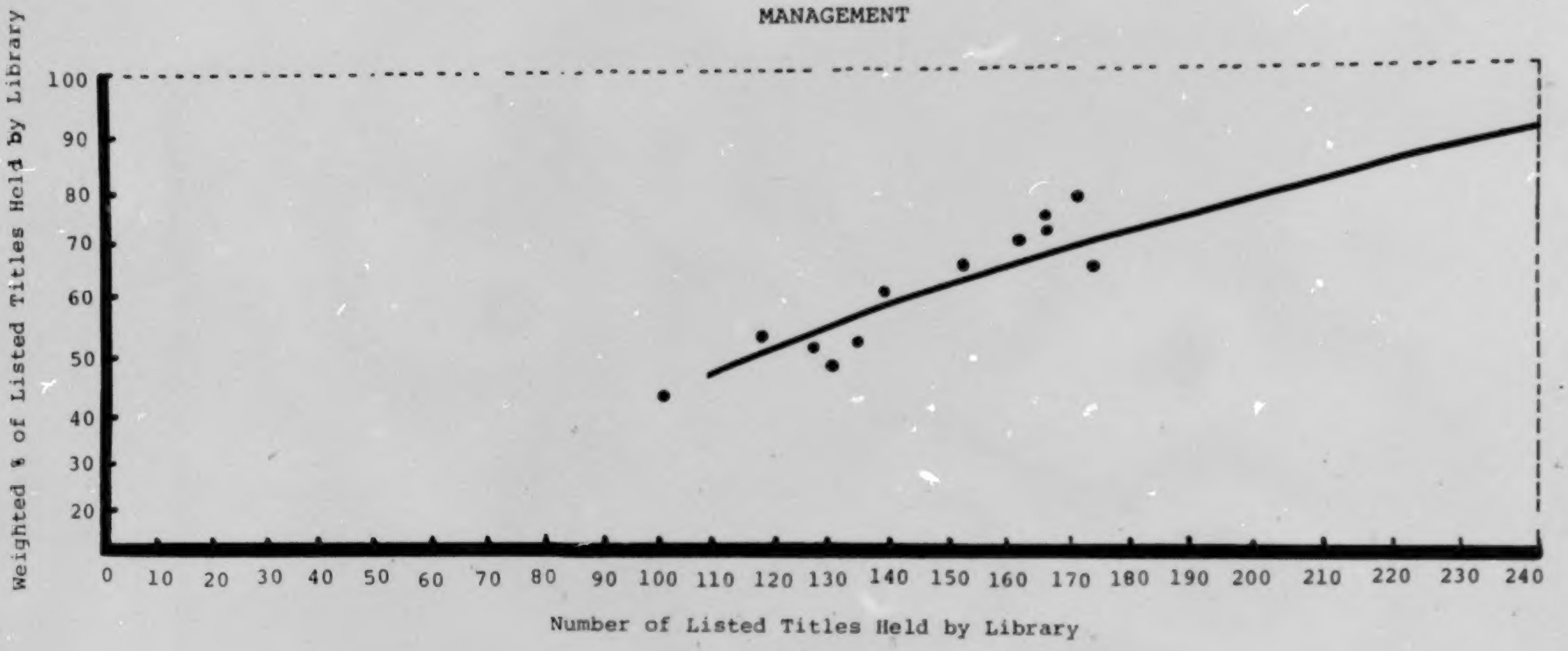

MANAGEMENT
Weighted % of Listed Titles Held by Library
100
90
80
70
60
50
40
30
20
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
Number of Listed Titles Held by Library

FIGURE 1.8

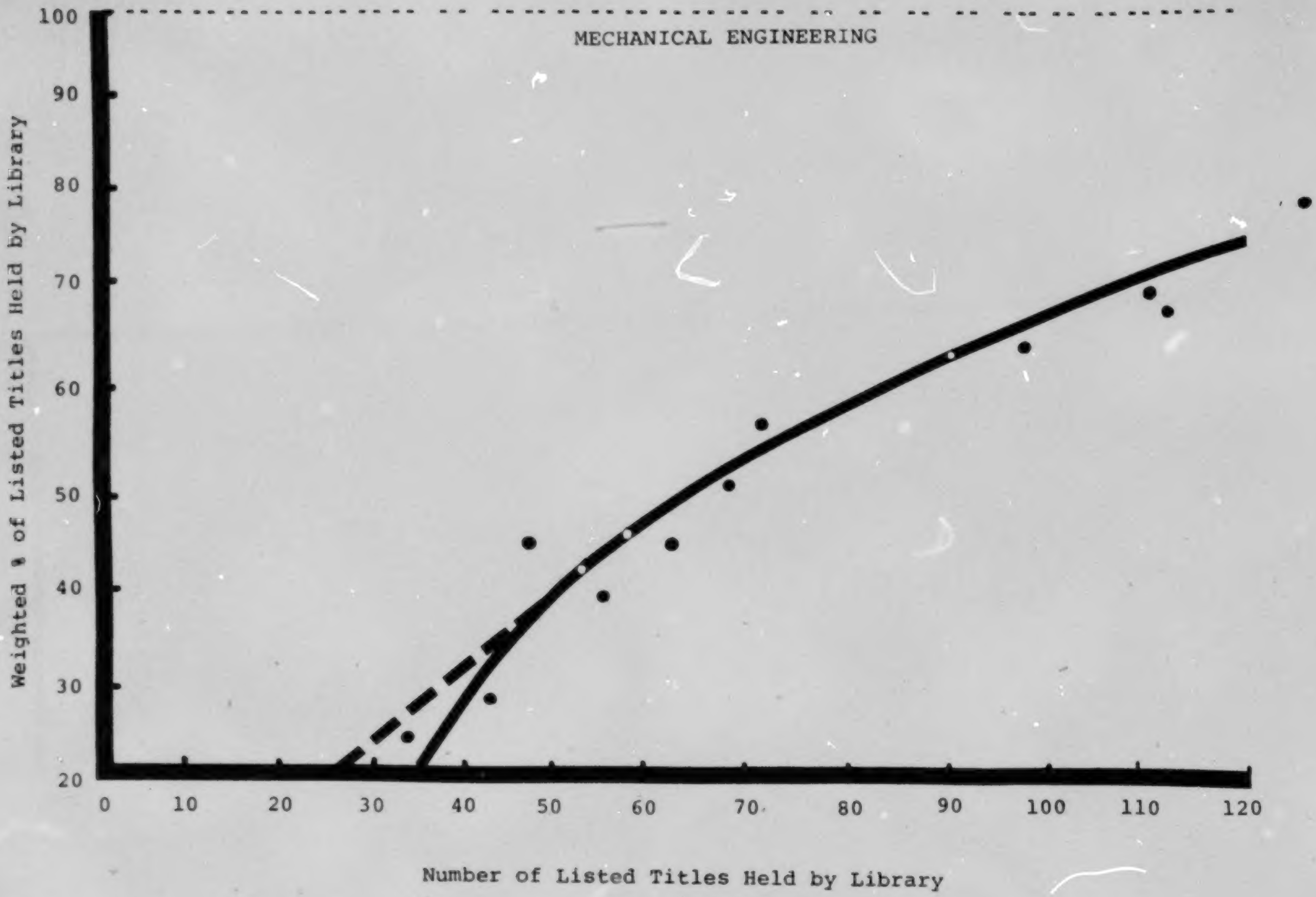

MECHANICAL ENGINEERING
Weighted % of Listed Titles Held by Library
100
90
80
70
60
50
40
30
20
0
10
20
30
40
50
60
70
80
90
100
110
120
Number of Listed Titles Held by Library

FIGURE 1.9

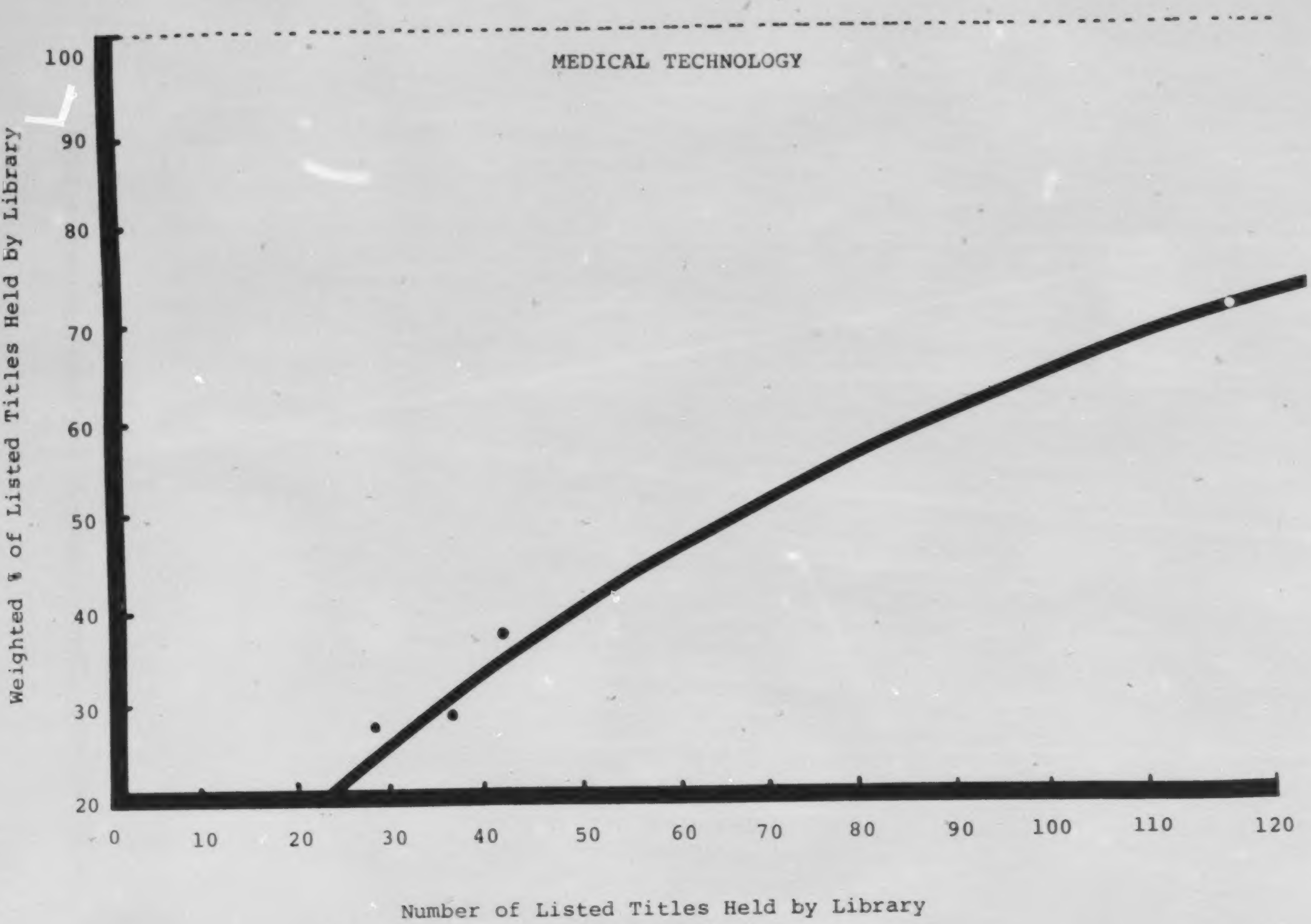

MEDICAL TECHNOLOGY
Weighted % of Listed Titles Held by Library
100
90
80
70
60
50
40
30
20
0
10
20
30
40
50
60
70
80
90
100
110
120
Number of Listed Titles Held by Library

FIGURE 1.10

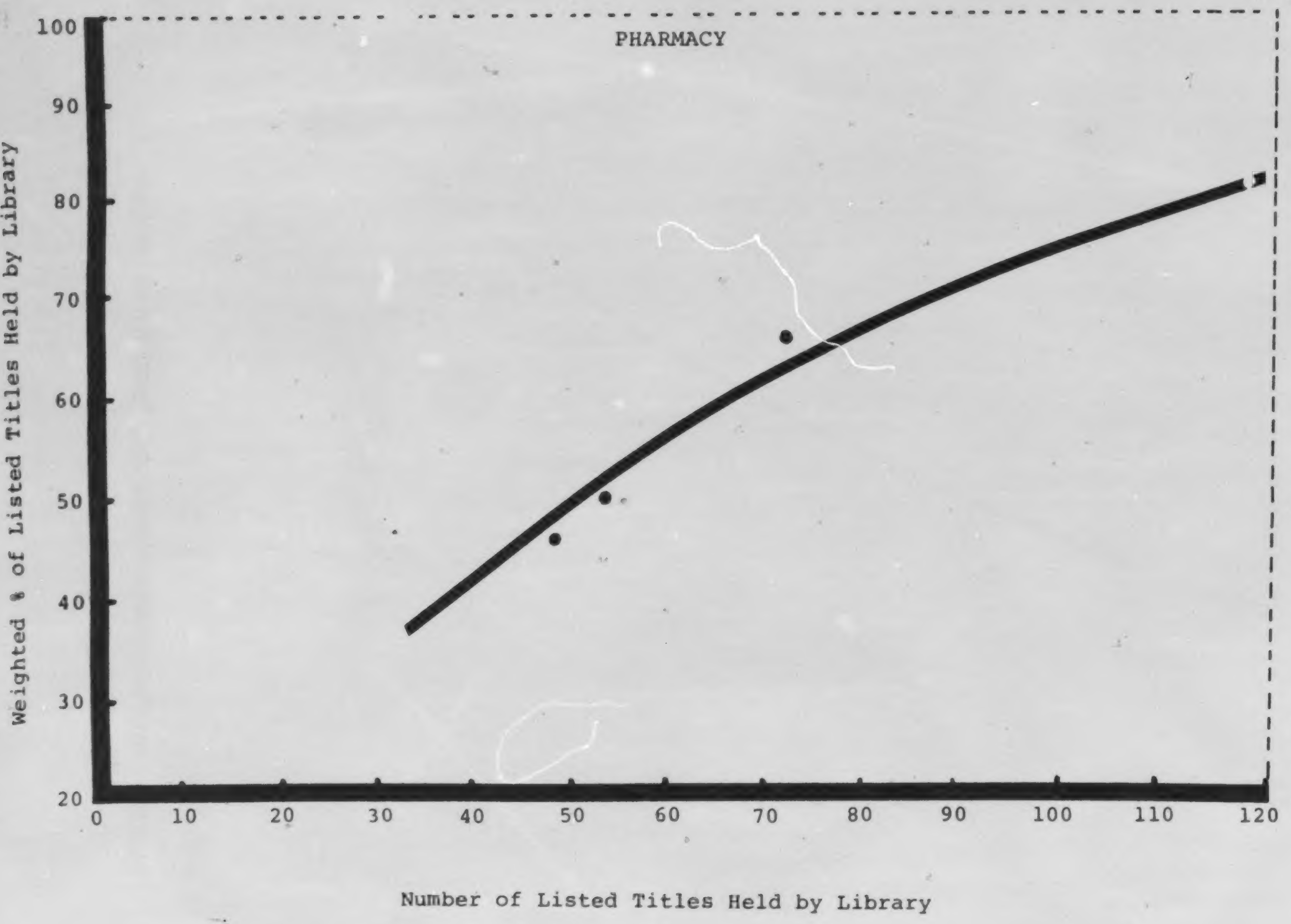


FIGURE 1.11

221

222

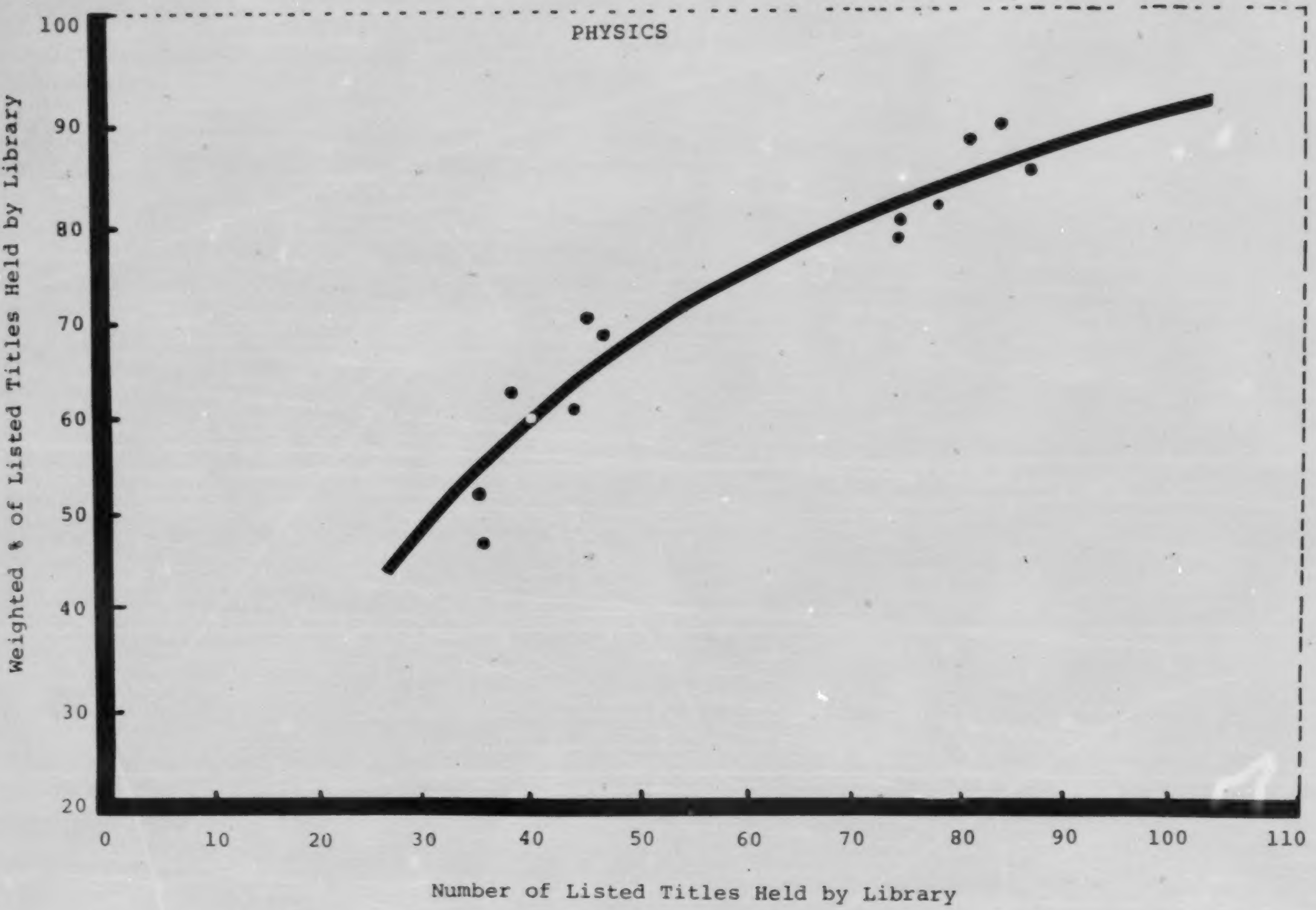
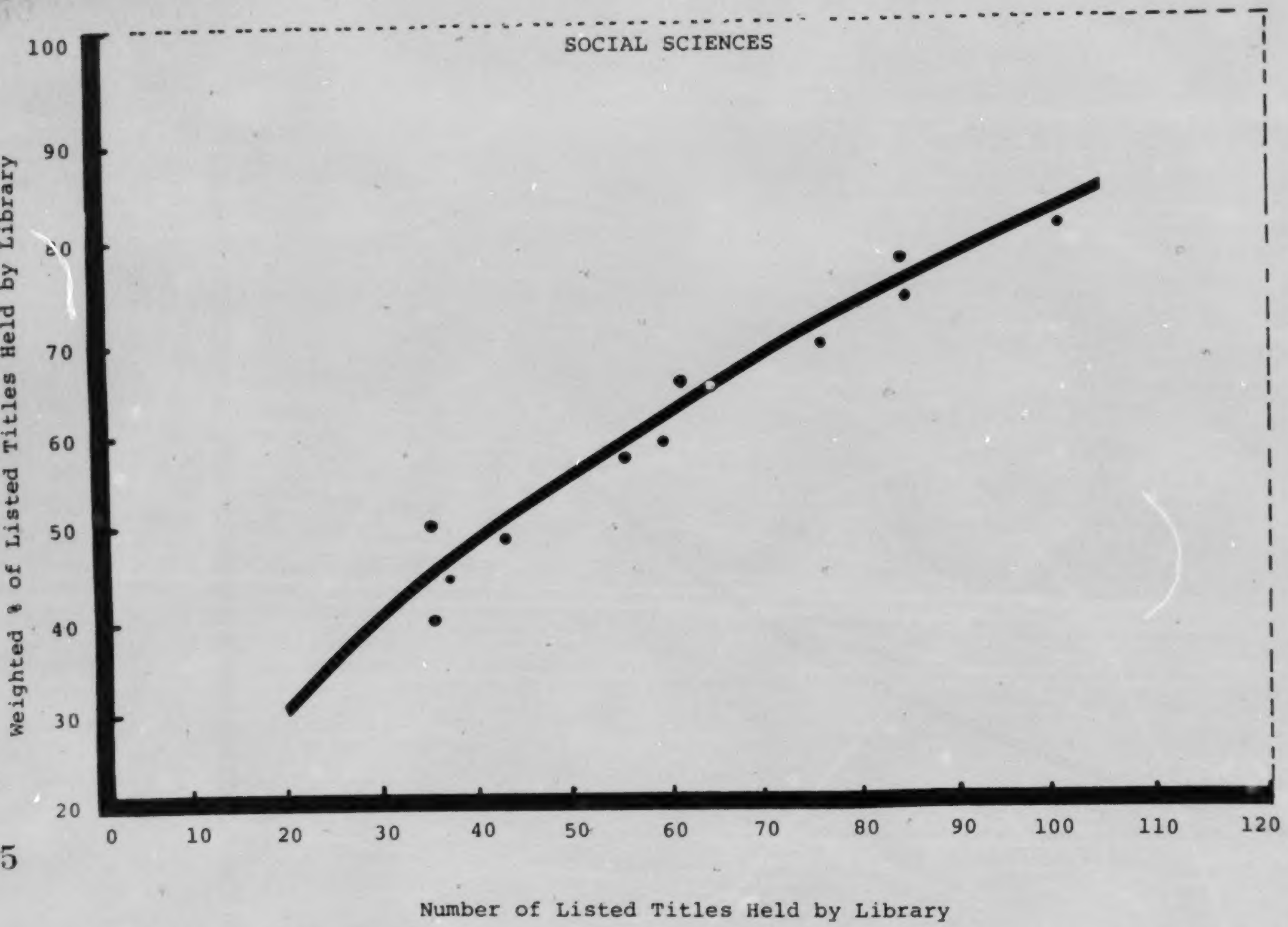

PHYSICS
Weighted % of Listed Titles Held by Library
100
90
80
70
60
50
40
30
20
0
10
20
30
40
50
60
70
80
90
100
110
Number of Listed Titles Held by Library

FIGURE 1.12


SOCIAL SCIENCES
Weighted % of Listed Titles Held by Library
100
90
80
70
60
50
40
30
20
0
10
20
30
40
50
60
70
80
90
100
110
120
Number of Listed Titles Held by Library

F I G U R E 1.13

Figures 1.3 to 1.13 indicate similar patterns for each course area, as might have been predicted from Bradford's Law of Scattering[9] - that most of the use of periodicals will tend to be concentrated on a few titles, while the supply of the last 20% or so of the titles found useful will require a large increase in the total number of periodicals held in a college library.

Figures 1.3 to 1.13 indicate also the very considerable differences that exist between course areas in the number of titles that might be required to provide a given level of holdings on a weighted basis. The extreme case of 'social sciences' arises, as we have suggested, by the nature of that programme as a conglomerate of three major fields, each requiring a different core of periodicals. However, the difference between the graphs for the two related fields of accounting and management indicate that each course area may differ significantly in the breadth of titles needed.

As with our recommendations on monograph provision, we are forced into the position of having to specify an average level of input to libraries that would allow individual libraries adequate provision in each course area, with the actual proportion of titles provided for particular course areas being established by each library to suit its own mix of courses served.

Table 33 indicates the number of titles in each course area that would have provided various proportions of the listed titles on a weighted basis, given ideal selection, i.e. that each library selected titles in descending order of the weightings given. In practice, it is unlikely that a library would achieve this, since mistakes in selection will always be made, and the table also shows the best estimates, derived from the graphs, of the number of titles that would in practice provide a given level of holdings on a weighted basis.

Since we are dealing with practical solutions, we suggest that the 'practical' figures in Table 33 are likely to be much closer to the realistic requirements of college libraries, as regards the necessary number of periodical subscriptions to provide a given level of theoretical availability

TABLE 33

NUMBER OF PERIODICAL TITLES NEEDED TO MEET VARIOUS PROPORTIONS OF DEMAND, IN TWELVE COURSE AREAS

		Accounting	Architecture	Chemistry	Civil Engineering	Electrical Engineering	Management	Mechanical Engineering	Medical Technology	Pharmacy	Physics	Social Science	Therapy
Number of Periodical Titles Providing an Availability Level, on a Weighted Basis, of:-													
60%	Ideal	15	34	23	23	37	64	52	54	39	17	94	36
	Practical	42	57	42	44	73	130	81	88	65	40	158	73
70%	Ideal	22	54	35	32	46	95	76	78	57	27	143	56
	Practical	50	74	58	58	90	160	112	116	85	55	210	95
80%	Ideal	34	84	52	49	59	147	111	113	84	45	223	90
	Practical	60	95	76	78	108	198	135	?	112	72	265	125
90%	Ideal	58	114	83	89	85	219	148	175	133	79	312	141
	Practical	78	120	102	108	130	240	180	?	?	96	?	?

of current periodical items. However, as with monographs, the theoretical availability of a periodical issue (in the sense that it is owned by a library) is not the significant factor from the user viewpoint - it is whether the issue is actually available when required.

It was speculated that the availability of serial items owned by a library would be higher than for monographs, because published failure surveys had shown that the major reason for monographs being unavailable in a library was that they were out on loan to readers. Few college libraries lend serials to readers, particularly to their major user group, students, and if they lend serials at all, lend them for shorter periods than for monographs. Although serials are more often away from the library for binding purposes, this rarely keeps as high a proportion of the serial collection away from the library at any particular time as is the case with monographs.

Tests of Retrospective Periodical Availability

As part of the Document Delivery Tests described in Chapter 4, a sample of periodical items was included, drawn randomly from lecturers' recommendations to students, as described on page 77. The same six course areas were involved as with the monograph tests. The combined serial availability results for each college are shown in Table 34.

As Table 34 indicates, the reduction in availability of periodical items in college libraries because of use and library policies is relatively small, although still significant in the larger colleges. From the results obtained, it seems likely that the effective availability of periodical items owned by college libraries ranges between 80% and 95%. In practice it seems likely that the availability of periodical issues would vary considerably from title to title, with those titles in popular demand having a much higher proportion of issues effectively unavailable. From the individual test sheets we scanned, there did appear to be a tendency for items in use or not located to be from the higher ranking titles in those listed by lecturers, but for us to be certain of this fact would have required a very much larger sample of

TABLE 34

DOCUMENT DELIVERY TEST RESULTS FOR SERIAL ITEMS

	Ballarat I.A.E.	Gippsland I.A.E.	R.M.I.T.	S.A.I.T.	W.A.I.T.
% of Sample Held by Library	45.1%	33.3%	66.3%	72.6%	75.4%
% Available Immediately (i.e. Within 10 Mins.)	42.4%	32.0%	51.2%	64.5%	65.7%
Document Delivery Test Score (Ignoring Effects of Branch Libraries)	42.4%	32.2%	52.0%	64.5%	66.9%
Reduction in Availability Caused By Use and Service Policies (as % of Total Items Owned)	6.0%	3.3%	21.6%	11.2%	11.3%

serial items for test purposes than we were able to administer.

As with monographic provision, for the reasons we gave on page 92, we are recommending an absolute minimum level of provision in even the smallest of colleges such that the probable availability of material meets 60% of the needs of users. If 95% of the serial material owned by a small library is effectively available, to provide a 60% availability level would require provision of titles to meet about 65% of the demand for serials in each course area. From Table 33 it is apparent that to provide this availability level would require wide differences from one course area to another. However, taking 'social science' to be a combination of three course majors, Table 33 suggests that, on average, a provision of 70 periodical titles per course would give a suitable minimum level of adequacy, disregarding overlapping use of periodicals by readers engaged with different course programmes.

Course Overlap

However, we cannot of course ignore overlapping use of periodicals by different course areas. By their nature, periodicals tend to include articles on a variety of topics, a few of which may be relevant to a large number of course areas. Some periodicals, such as *'Nature'* or *'Scientific American'* are truely multidisciplinary in form, while other such as *'Engineering'* cover several related fields. A study of the replies from the lecturers was therefore conducted with the aim of arriving at estimates of overlapping use of periodical titles by related course areas. The results are shown on Table 35, and indicate clearly the variety of extent to which courses are likely to overlap in their use of periodicals, and also show once again that the literature of one subject may contribute far more to another than vice versa. Only fairly closely related course areas are shown in Table 35, but even course areas which would appear to have little or no relation to each other use a few periodicals in common, e.g. civil engineering and pharmacy had an overlapping use of two periodical titles - both understandably titles with a wide range - *'Scientific American'* and *'New Scientist'*.

In any multidisciplinary college, and in most monovocational colleges, it is likely that the majority of courses will have at least one other course area fairly closely related to them. Colleges tend, on the whole, to develop their range of programmes with some regard to the existing course pattern, rather than initiate completely new areas unrelated to the studies previously offered, although this does also happen on occasion. The data in Table 35 lead us to suggest that the use of periodicals in teaching and studying any course area is likely to overlap other course areas, on average, by at least 35%. In arriving at this figure we have given due regard to two factors:-

(a) The more heavily used journals for one course area tend to be those that are used also in other course areas, and therefore the weighted overlap figures are likely to be closer to the true situation than counting the simple unweighted overlap of titles. (This proposition,

TABLE 35

OVERLAPPING RECOMMENDATIONS OF PERIODICAL TITLES IN RELATED COURSE AREAS

Course Areas		Number of Periodical Titles Overlapping		Overlapping Titles as % of Total Titles Recommended For		Average Overlap Per Course Area	Average Overlap per Course area on a Weighted Basis
A	B			A	B		
Accounting	Management	62	72	52.5%	21.7%	37.1%	55.9%
Accounting	Social Science	37		31.4%	8.9%	20.2%	29.6%
Architecture	Civil Engineering	17		11.7%	12.1%	11.9%	15.4%
Chemistry	Pharmacy	29	44	20.0%	15.8%	17.9%	28.6%
Chemistry	Physics	21		14.5%	16.3%	15.4%	31.4%
Civil Engineering	Mechanical Engineering	21	36	14.9%	10.3%	12.6%	17.0%
Electrical Engineering	Mechanical Engineering	18	34	9.3%	8.8%	9.1%	12.8%
Electrical Engineering	Physics	21		10.9%	16.3%	13.6%	20.8%
Medical Technology	Pharmacy	66	71	28.3%	35.9%	32.1%	44.2%
Medical Technology	Therapy	17		7.3%	7.5%	7.4%	16.7%

which is clearly shown by the fact that the overlap on a weighted basis is consistently larger than on a straight titles basis, has been enunciated as Garfield's 'law of concentration' in which he maintains[9] that the 'core' journals for any one subject field are also the main 'fringe' journals for other fields. Garfield has gone so far as to suggest that 1000 periodical titles could provide for 90% of the research demands for articles in the whole of science and technology. Without wholly accepting Garfield's conclusions, there is certainly a concentrating effect of this kind, when a wide range of subject fields are considered.)

(b) The overall extent of overlap for periodicals in a course area is not simply additive for each extra course area considered. Some periodicals will receive use from many course areas, e.g. *'Scientific American'* was listed for every course area except accounting. Thus the main extent of overlapping use is evident by considering one or two closely related fields. However, the extent of overlapping use for some periodical titles will be such as to justify a duplicate subscription to the title, and this is allowed for in our recommendations.

If the titles for each course area receive an overlapping use of 35%, this would reduce the basic requirement for each course to 65% of the 70 titles recommended above, i.e. about 45 titles per course area as a minimum requirement, without allowing for any special requirements of individual lecturers.

Allowance for Special Interests of Teaching Staff

To this basic allowance for each course area needs to be added some provision for specialist interests. Referring back to the numbers of 'unique' periodicals in Table 31, we feel that where the number of lecturers in a course area is low, a provision of three periodical titles for each full-time member of teaching staff is justifiable, but that in course areas where a substantial number of staff are involved perhaps only one title per capita is justified. Ideally, this provision would be specified by counting the number of teaching staff involved in each course area, and then making an allocation for each course area on a per capita basis. However, we do not consider this to be a practical solution, since many staff members are involved in more than one course area, and the problems of allocating them to particular course areas for this purpose would be difficult and unnecessary.

We therefore propose that colleges with less than 100 FTE members of teaching staff should receive an allocation of 3 titles per FTE teaching staff, with 2 titles for every extra member of teaching staff up to 200 FTE, and one title for every member of teaching staff over 200 FTE. Such an method of allocation will tend to favour a college with a narrow range of course areas and relatively large numbers of teaching staff per course, more than a college with the same number of members of teaching staff but a wider range of courses. But we feel that differences will be small, and that, in any case, colleges with a narrow range of courses may well require an extra allowance for 'fringe' periodicals that would not be provided by their basic allocation per course area.

Current Serials Other Than Periodicals

So far we have been considering only periodicals in the narrower sense in which we define the term on page 70, and the allowances made include no provision for:-

(a) Bibliographic serials, such as abstracts, indexes, current awareness publications, or other serial bibliographies.

(b) Annuals, yearbooks, almanacs and other serials appearing at yearly or less frequent intervals.

(c) Serial services, such as trade catalogues or loose-leaf serials.

(d) Any monographic or publishers series that might be treated as serials. (We should expect the great majority of these to be treated as monographs, and they are treated largely as part of our monograph recommendations in Chapter 4.)

In the replies received from teaching staff, a number of titles in the above categories were included for each course area.

However, it was clear that in many cases, respondents did not regard various forms of serial as 'journals' even though encouraged to take an inclusive view of the word.

Bibliographical Serials

For the twelve course areas for which replies were received, a total of 59 bibliographical serials were listed, some several times, and by lecturers in different course areas. Many bibliographic serials, notably abstract journals in science and technology, are expensive. Nevertheless, if college libraries are to rely on holding a relatively limited current range of serials, then staff and students must be able to have adequate bibliographic access to articles in a much wider range of journals and other publications, so as to allow a sufficient depth of project work for students, and for individual lecturers to pursue interests beyond immediate course requirements. We feel that this is a possible area for inter-library co-operation, if larger colleges holding copies of major abstracting services were prepared to undertake searches and identification of references on behalf of smaller institutions. However, such a development would require a firm financial foundation and necessary staffing at the college involved. In the absence of such a development, which in any case might be expected to result in a relatively small number of serial purchases being foregone (although considerable finance might be involved), we recommend a minimum allocation of 3 bibliographic serials per course area.

Annuals and Serial Services

As regards other kinds of serials, there appear to be significant differences from one course area to another in the type of serial that is needed. In the applied science and paramedical areas, a number of lecturers listed annual review serials of the 'Annual Review of ...', 'Advances in ...', 'Progress in ...' type, which contain review articles summarising developments in a particular area. This ties in with the results of the Americal Psychological Association study of teach staff requirements[11], which indicated that this type of publication was particularly useful to psychologists. In contrast, architecture staff specified trade and suppliers catalogue series, while accounting and management lecturers obviously made a substantial use both of looseleaf serial services of the type published by CCH Australia and Butterworths, covering legal changes, and the annual reports of government bodies and other international and national organisations. Annual statistical publications were listed both for social sciences (particularly by economics lecturers) and courses in the business studies area. Only 85 annual and other non-periodical serials were listed in the replies for all 12 course areas, and we find it very difficult to draw any conclusions from the data we received on the need for this type of serial.

Many annuals and yearbooks are of the general reference type which should be included in a college library collection, regardless of the courses offered, and these are considered below. However, in relation to provision for courses, we tentatively suggest, without a great deal of evidence, that a provision of 12 annual and service type serials per course area would be satisfactory.

This would result in a total basic provision of 60 serial titles per course programme, with an extra allowance depending on the number of FTE teaching staff in the college.

Current Serial Provision and Level of Courses Offered

In our recommended levels of provision for monographs in Chapter 4, we made a specific extra allowance in cases where a C.A.E. offered courses at the Post-graduate Diploma or Master's level. The argument was that the basic recommended levels per course area had been primarily determined from data resulting from studies of undergraduate (i.e. up to 'Graduate Diploma') course needs. Clearly, post-graduate courses which built directly on these undergraduate programmes required a further provision of monographs written at a higher or more specialised level.

In the case of serials, our recommendations have been arrived at primarily in terms of the overall needs of teaching staff. We do not consider, therefore, that the introduction of a post-graduate course, in an area where there already exists an undergraduate level course, requires an extra provision of serial titles, if teaching staff are being adequately provided for at the levels we have suggested thus far. No such extra provision has been included in our recommendations below.

Serial Provision for Non-Course Related Requirements

As with monograph provision, some provision of serials is also required to be made to meet the general purposes of the college other than those directly linked to courses. We would envisage that all college libraries need to include the following types of general serial material:-

(a) Newspapers and other current affairs periodicals.

(b) General almanacs and yearbooks, including those providing statistical material.

(c) A range of educational serials relating to tertiary education, general educational methodology and educational administration.

(d) General bibliographical serials needed by library and teaching staff in relation to selection and acquisition of books.

We approached our recommendation on this general serial provision on a title-by-title basis by scanning material in various college and university libraries, and by listing serial titles that in our judgement must be regarded as essential purchases in any library. To make provision for the four kinds of serial referred to above, we conclude that it would be quite inadequate to supply less than 75 titles for general purposes. This total specifically excludes handbooks, prospectuses and calendars of colleges and universities, which may be treated as serials in some libraries. This level of provision would be satisfactory only in smaller college libraries, and in larger colleges we regard it as necessary to provide a much wider range of general serials. This would result partially from the increased library selection and bibliographical problems faced in larger colleges, greater requirements for statistical data and educational serials, and a wider range of general interests among a larger student and staff body. We therefore recommend a provision of 75 general serial titles plus one general serial title for each 50 EFT students. This would allow larger colleges with greater financial resources to provide a most adequate supply of general serial reading, some popular titles being available in duplicate.

Retrospective Serial Needs

The final problem in specifying serial provision in libraries is that of the retrospective collection. So far, we have dealt only with current titles. As we indicated on page 132, we regard the problem of provision of back runs of serials of less importance than that of providing an adequate range of current titles, because, with time, a library with sufficient current titles will automatically build up a retrospective collection, if it maintains its subscriptions. Nevertheless, at the formation of a new college, and each time an existing college establishes a new course, there will arise an immediate need for retrospective issues of a substantial number of periodicals, and also a smaller requirement for older issues of many annuals and yearbooks of the reference type, where the main use is confined to the current issue.

To assist us with this problem, an analysis was carried out of the publication dates of all serial items recommended by lecturers in the six course areas in which references were supplied, in the same manner as with monographs described on pages 117 to 119. Table 36 represents the results of the analysis, and Table 37 illustrates the rate of declining use of serial items with age, after allowing for general increases in the rate of annual publication of serials. These increases were once again calculated on the basis of the data on publication rates provided in Barr's survey[12], and all the caveats outlined in the analysis of monograph publication dates apply equally to this analysis of serial items.

Comparisons with the monograph data for each course area in Tables 27 and 28 suggest a similar distribution for the two types of material. Whereas monograph material does not appear to reach its 'peak' of usefulness for perhaps three to four years after publication, serial items are recommended

TABLE 36

DISTRIBUTION OF PUBLICATION DATES FOR SERIAL ITEMS RECOMMENDED FOR FIVE COURSE AREAS

	Accounting	Architecture	Chemistry	Pharmacy	Social Science
1974	3.2%	0.6%	2.8%	4.3%	0.8%
1973	14.2%	12.9%	13.9%	12.8%	11.1%
1972	15.2% }42.8%	9.2% }29.4%	14.8% }47.2%	15.4% }34.2%	14.8% }38.1%
1971	13.5%	7.4%	18.5%	6.0%	12.2%
1970	9.6%	6.7%	12.0%	7.7%	9.5%
1969	5.5%	10.4%	7.4%	5.1%	7.5%
1968	6.1%	8.0%	5.5%	9.4%	8.7%
1967	5.5% }15.0%	4.9% }19.0%	2.8% }13.0%	6.0% }21.4%	7.3% }21.0%
1966	3.4%	6.1%	4.6%	6.0%	5.0%
1965	6.1%	6.1%	0.0%	7.7%	3.6%
1964	0.7%	3.1%	4.6%	4.3%	2.2%
1963	2.2%	4.9%	0.9%	5.1%	2.1%
1962	1.0% }3.8%	0.6% }8.0%	0.9% }2.8%	0.9% }6.8%	1.7% }5.9%
1961	0.5%	2.5%	0.9%	0.9%	2.1%
1960	0.3%	1.8%	3.7%	0.9%	1.5%
1956-58	2.4%	1.2%	0.0%	2.6%	2.8%
1951-53	0.7%	1.2%	3.7%	0.0%	1.4%
Pre-1950	6.1%	9.2%	2.8%	3.4%	2.2%

N.B. Sample of serial items recommended for Mechanical Engineering was too small for distribution to have any validity.

TABLE 37

AGE DISTRIBUTION OF RECOMMENDED SERIAL ITEMS AFTER CORRECTION FOR GENERAL INCREASES IN SERIAL PUBLICATION

	Accounting	Architecture	Chemistry	Pharmacy	Social Science
1971-73	1.00	1.00	1.00	1.00	1.00
1965-68	0.43	0.79	0.34	0.76	0.67
1961-63	0.13	0.40	0.09	0.29	0.23
1956-58	0.10	0.06	0.00	0.14	0.13
1951-53	0.04	0.09	0.17	0.00	0.08

more quickly and peak utilisation of titles appears to be reached about two years after publication. This is not surprising, since many periodical articles are of a more transitory interest than monographs, while the automatic receipt of most of the items via subscriptions, plus the availability of photocopies via inter-library loan, means that the ordering and supply delays involved before monographs may be recommended to students are largely eliminated. There is no strong evidence to suggest, however, that C.A.E. use of serial publications will decline with age any faster than monograph items, and as with monographs, some serial items appear to retain a residual usefulness for a very long period, or even indefinitely - as can be seen by the percentages of pre-1950 publications referred to.

It is clear from the latest 1975 statistics relating to C.A.E. library holdings of serial volumes, as published in *'Australian Academic and Research Libraries'*[13], that very few colleges have substantial retrospective holdings of serial volumes. At the end of 1975, only one college held more than 40,000 serial volumes, and only 13 colleges more than 10,000 serial volumes. This results partly from the fact that most colleges have rapidly expanded their current serial subscriptions very recently, so that few titles have been subscribed to for more than five years (for colleges for which comparative figures were available, the colleges in 1970 held only 37% of the number of current titles held in 1975).

However, the statistics also suggest that few colleges have been able to acquire retrospective runs of any sizable number of serial titles. Our data in Table 36 suggests that whenever a library places a new order for an existing serial title, it should strongly consider immediately acquiring also a retrospective run of two or three years of the title concerned since this material is also likely to be in relatively heavy use by students. The current year's issues will of course also receive a heavy scanning use by staff for updating purposes and from which to gather material for later recommendation to students, but this does not obviate the conclusion that many serials may only receive their heaviest usage by students 2-3 years after publication.

TABLE 38

RETROSPECTIVE HOLDINGS OF PERIODICAL BIBLIOGRAPHIC VOLUMES IN COURSE AREAS STUDIED BY DOCUMENT DELIVERY TESTS

Course Area	Name of College	Ballarat I.A.E.	Gippsland I.A.E.	R.M.I.T.	S.A.I.T.	W.A.I.T.
Accounting	- Gross	254	142	946	956	862
	- Less 35% Overlap	165	92	614	621	560
Architecture	- Gross	-	-	952	907	1,058
	- Less 35% Overlap	-	-	619	590	688
Chemistry	- Gross	523	251	1,633	1,183	1,259
	- Less 35% Overlap	340	163	1,061	769	818
Mechanical Engineering	- Gross	614	465	2,082	1,585	969
	- Less 35% Overlap	399	302	1,353	1,030	630
Pharmacy	- Gross	-	-	-	618	1,303
	- Less 35% Overlap	-	-	-	402	847
Social Science	- Gross	505	255	956	1,207	1,849
	- Less 35% Overlap	328	166	621	785	1,202

Table 38 illustrates the retrospective holdings of periodical bibliographic volumes in five C.A.E. libraries. The holdings figures were arrived at by a straight count of the number of volumes held of periodical titles on the lists recommended by lecturers in the various course areas, compiled as described on pages 129 to 130. The table shows clearly the very small retrospective holdings in the smaller colleges, and even in some course areas in the larger colleges, particularly in the social sciences area where courses have been developed relatively recently. We regard the retrospective holdings in many cases as grossly inadequate, and reference back to the Document Delivery Test results for serials in Table 34 confirms this view, that the availability of retrospective material is simply not adequate even for undergraduate student demands, let alone the much deeper demands of teaching staff.

From Tables 36, 37 and 38 we estimate that a basic minimum provision of serial volumes, so as to provide an initial availability level for serial items, as with monographs, of 60%, would be an average five years back run of each current title. Allowing for the fact that some serial titles cease publication, and translating the five years of publication into bibliographic volume terms (as defined on page 65), we arrive at a basic retrospective provision of 8 bibliographic volumes for each current serial title subscribed to. This would indicate an initial provision of 480 bibliographic volumes (8 volumes times 60 titles) per course area. This would be regarded purely as an initial provision to be reached by the time the first students graduate from the course. In any course area that has been established for many years, we should expect the library to have built up a serial collection of well over 1,000 bibliographic volumes per course area. On the basis of the figures in Tables 36 and 37 we should expect libraries to build individual serial runs eventually for an average maximum of about 15 years, which would supply 90% of the demands on the serials collection. Hence we would expect the total provision on a course area basis to reach approximately 1500* bibliographic volumes per course area in the smallest colleges. This is not a large figure, and we are aware from the colleges at which we undertook studies that this is already exceeded by some course areas in the larger college libraries, but these libraries would also have a larger provision arising from their allowances of current serial titles for each member of teaching staff.

Retrospective requirements for many non-course-related serials are likely to be smaller than for other serials, since older issues of general current affairs serials and annual reference works are likely to be of marginal utility after a short time. On the other hand, many general bibliographical serials of use to the library (e.g. national bibliographies) remain useful indefinitely. Overall, we consider the average length of retrospective run required to be rather smaller than for course-related serials and have arrived at our recommendation below on this basis.

**Note:* Arrived at as 60 titles x 15 years of subscription, i.e. 60 titles x 24 bibliographic volumes = 1440 bibliographic volumes.

Conclusions

We have concentrated our work in this chapter on specifying adequate levels of current serials input to collections, because the retrospective serial problem to a large extent will solve itself, if C.A.E.'s are able to maintain their current subscriptions to serials. Nevertheless, the results of our analysis of serial items recommended by lecturers, and our observations in visits to C.A.E. libraries, have strongly convinced us of the need for colleges to invest in short back runs of serials, as well as new current subscriptions, whenever a new course programme is developed in a college, if students and staff engaged in the early years of a programme are not to be seriously disadvantaged.

On the other hand, our visits to college libraries have also given rise to the opposite concern, that in time C.A.E. libraries may retain long runs of marginally useful serials for indefinite periods. This is not a major problem at present, since most colleges have only recently started to build up substantial numbers of subscriptions to serials. However, even currently, there is some evidence to suggest that in older-established colleges, libraries are retaining long runs of those serials for which they have held subscriptions for many years, without giving sufficient attention to the costs involved. This problem will increase rapidly in the years ahead, and we consider that all colleges need to give attention to developing a clear policy regarding the discarding of older volumes of serials. We should expect such a policy to give due weight to the availability of titles considered for discard in other libraries, such as university and state libraries, in the locality, but the main criterion for decision will be the extent of likely further use by members of the college. We should expect a relatively high rate of discard of older serial volumes from C.A.E.'s by 1985, if desirable economies in library building space and shelving provision are to be achieved.

The application of our quantitative recommendations for current serial provision below results in recommended levels which have already apparently been achieved by a number of colleges. However, our visits to colleges, and the published statistics relating to serial holdings in C.A.E. libraries, lead us to believe that a number of libraries have 'inflated' their current serials holdings statistics by adopting a very liberal acquisition policy regarding serials received by gift or exchange. We must emphasize that in no sense are serials received by gift or exchange 'free'. There are considerable costs in staff, building space and shelf space involved in the processing and storage of 'free' serials. We regard it as essential that all C.A.E. librarians should have a firm policy on the acceptance of serial gifts, which would result in more realistic statistics relating to serial holdings. We consider that some very real deficiencies in the ability of some colleges to take out current serial subscriptions have been masked by the inclusion in serials holdings statistics of a substantial number of 'gift' serials of very limited value to the college community.

We are aware that our justifications for the recommended levels of serial provision rest on very limited data. Nevertheless, we regard the levels proposed as providing a very adequate quantitative base for continued development of C.A.E. collections. However, we consider that serial collections will only be adequate in reality, if college librarians develop more coherent policies on the selection of serial titles to be acquired by subscription, gift or exchange, in terms of the real needs of the college. Further reference to this is made in Chapter 11, as the problem is basically that of ensuring quality within a given collection size.

RECOMMENDATION 6. That in making estimates for the necessary provision of serial collections in C.A.E. libraries, the following formula be applied:-

A. Current Serial Titles

1. Basic Collection of general serial titles		75 titles
Plus for each 50 EFT students	Add	1 title
2. For each major course area (do not count twice where two or more levels of qualification are offered in the same course area, whether undergraduate or postgraduate)	Add	60 titles

3. For each FTE member of Teaching Staff up to and including 100 FTE — Add 3 titles

4. For each FTE member of Teaching Staff over 100 FTE and up to and including 200 FTE — Add 2 titles

5. For each FTE member of Teaching Staff over 200 FTE — Add 1 title

6. For each 50 EFT students — Add 1 duplicate title

B. *Retrospective Serial Holdings* (i.e. *not* to include the current year's issues)

1. Basic collection of general serial titles — 400 bibliographic volumes, increasing to a *maximum* of 1,200 bibliographic volumes within 15 years from the first courses being offered by the college

2. For each major course area — Add 480 bibliographic volumes by the end of the second year in which the course is offered, increasing to a *maximum* of approximately 1,500 bibliographic volumes within 15 years from initiation of the course

3. For each FTE member of Teaching Staff — Add 20 bibliographic volumes, increasing gradually to a *maximum* of 60 bibliographic volumes as the college nears its maximum size

These recommended levels *exclude* any holdings of the calendars, handbooks or prospectuses of individual education institutions. They *include* all serial volumes held in microform, counted as if they are held in their printed equivalents.

In interpreting the formula above, the guidelines recommended on pages 102 to 103, are to be followed, except that no additional allowance is made for a postgraduate course in the same course area as an undergraduate course; and the definitions of 'current title' and 'bibliographic volume' at the end of Chapter 3. The formula should be used in planning each year, recalculating the total current serials required to allow for course changes and growth of teaching staff numbers, to give an estimate of the number of new serial subscriptions required for the current year, and for investment in additional retrospective volumes for new course areas and the increase in teaching staff since the previous year.

Examples of the application of the formulae to five college libraries in 1975 are given in Appendix 2.

RECOMMENDATION 7. That in the application of the formulae in Recommendation 6, serial titles received by gift or exchange may not be counted so as to form more than 25% of a library's current serial titles, for the purpose of comparison with the recommended level.

RECOMMENDATION 8. That all C.A.E. libraries reconsider their policies on the receipt of current serials by gift and exchange, and that any college which receives more than 25% of its total current serial titles by gift and exchange initiate a review of its serials collection, to determine whether the titles received by gift and exchange merit the processing and storage costs involved.

RECOMMENDATION 9. That any C.A.E. library containing retrospective serial holdings of more than 20 bibliographic volumes per current serial title held seriously examine its collection with a view to the possible discarding of older and less-used serial volumes.

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CHAPTER 7

PROVISION OF NON-BOOK MATERIALS

Introduction

In our discussion of statistical trends in C.A.E. libraries in Chapter 3, we indicated the large variations from college to college in the current extent of provision of non-book materials*. There was some evidence that part of this variation is because some course areas in colleges have an intrinsically and substantially greater need for non-book materials than others. Colleges offering courses in art, architecture, music, teacher education, and visual arts, in particular, have built up their audio and/or visual resources at a considerable rate - to the extent that, for example, the Victorian College of Arts library in 1975 spent more on non-book materials than on books and serials.[1]

A comparison of the figures in Tables 9 and 10 suggests that the ex-teachers colleges have tended to invest relatively more of their library resources in non-book materials than the 'technological' colleges, but even in the case of teachers colleges of very similar size and scope, there are very wide variations in the provision of non-book materials. As we concluded on page 42, these differences may only be explained in terms of the relative importance that the teaching and library staffs of the various colleges have attached to the provision of audio-visual materials. For example, the ex-teachers college libraries in 1975 (i.e. for those for which financial breakdowns are available) were spending from a low of 4% to a high of 32% of their library materials budget on non-book materials.[2]

The results of the statistical study suggested strongly to us that there would be considerable difficulty in arriving at any quantitative recommendations of provision for non-book

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**Note:* 'Non-Book Materials' have been defined in Chapter 3 to include all library materials other than printed books, pamphlets and serials, musical scores and microforms.

materials, which might be applicable to colleges as a whole. The review of the published literature confirmed us in this view, since there was considerable reluctance to specify quantitative provisions for non-book materials in standards published either in Australia or overseas. Even in the latest, 1975, standards for colleges and universities in the United States[3], where there has by now been a fairly lengthy history of audio-visual materials use in libraries, it is stated that they are unable to arrive at any quantitative recommendations for non-book materials. If the few published recommendations for the provision of non-book materials are examined (see Appendix 1), there is a wide variety in the levels of recommended provision for different types of non-book materials. What is evident from those recommendations, however, is that the level of audio-visual provision generally proposed is considerably above the existing provision in most C.A.E. libraries, particularly those other than ex-teachers colleges. Only in college libraries with the largest print resources, such as Canberra C.A.E., Tasmanian C.A.E., Western Australian Institute of Technology, Royal Melbourne Institute of Technology, and Melbourne State College, can there be said to be really substantial non-book resources of all types. This suggests that many of the C.A.E.'s, in particular the 'technological' ones, may have been inhibited thus far from an adequate development of their non-book resources collection, by their need and desire to first build up their basic collection of monographs and serials. The initial costs involved in the provision of the equipment necessary for using most types of audio-visual material may also have been an inhibiting factor.

Use of Non-Book Materials

We find great difficulty in trying to determine what would be a suitable rate of development for non-book collections in C.A.E.'s. A major difficulty faced is in obtaining information regarding the use of non-book materials in academic libraries. There are, of course, many works in the educational and library literature describing the range of audio-visual materials available, and their suitability for certain purposes in an educational environment. In a previous report to the

Commission[4], McNally has covered this ground very adequately from the point of view of C.A.E. libraries, and we do not need to repeat his conclusions. But neither McNally nor any of the other published sources we have seen give any indication of the relative use being made of audio-visual materials in academic libraries, as compared with that of the more traditional print materials.

In the replies that we requested from lecturers regarding the material they recommended to students in various course areas (described in Chapter 4), the staff concerned were encouraged to include details of all kinds of material - monographs, serials and audio-visual items. It is possible that lecturers interpreted the meaning of 'recommended study materials' more narrowly than we had intended, but the proportion of non-book items in the total of recommendations was neglibible (i.e. under 1%). Apart from some recommendations of audio-tape and video-tape material taken from radio and television programmes, the amount of non-book material recommended was, to us, surprisingly low, even for architecture students, where we should have expected a greater recommendation of visual material other than in books and journals. This does not imply that students are not making individual use of non-book materials for study purposes. Clearly, had we made a detailed study of course requirements for students of art, of music, and perhaps languages, teacher education, geology, or geography, we may well have found a greatly increased rate of recommendation of non-book materials. Nevertheless, it does appear that in most course areas, lecturers are at present not requiring their students to use audio-visual materials in the same manner as they are expected to use monographs and serials.

We found some slight evidence, however, to suggest that students themselves may be making relatively greater use of audio-visual materials than might be expected from lecturers' recommendations. In the study of student sources of study materials described in Chapter 8, the audio-visual proportion of total items is still negligible (5%) for the same six course areas concerned, but there was some evidence of a wider range of use of such materials - including audio-tapes, photographs, films, slides and models (chemical and biological). However, the percentage of total material used was still exceedingly small, and much smaller than the proportion of audio-visual items in the colleges concerned might suggest. Also a relatively high proportion of non-book materials used were obtained from sources outside the college library, mainly items held by individual lecturers within departments.

Apart from the individual student use of non-book materials, some of these materials can be expected also to receive considerable use in a group situation - in a lecture or tutorial session. This use is likely to show as a very small proportion of any statistics kept by a college library - even if the materials used are owned by the library, and in many cases such 'classroom' materials are held as personal copies of lecturers or in teaching departments. Even if the item is kept in the college library, it may show in any statistics as one loan, yet may be 'used' by a class of fifteen, or even two hundred.

In spite of this difficulty, we believed it to be worthwhile to attempt to obtain some information relating to the use of non-book materials in college libraries. Within the project limitations it was not possible for us to conduct a survey of this use, but statistics of borrowing of non-book materials were obtained from as many C.A.E.'s as possible. In many cases, it was not possible for libraries to provide separate statistics relating to loans of audio-visual items, but statistics for the remainder are shown in Table 39, where a comparison is made with the loan statistics for monographs in the same colleges.

Extreme caution needs to be exercised in drawing any conclusions from Table 39. Colleges differ considerably in their treatment of audio-visual materials. In some colleges all such material is kept in an area where there is no, or limited, personal access for users. In such cases the loan statistics would include not only borrowing for use outside the library but also for use within the library. This would tend to inflate the audio-visual proportion of total loans, since a high proportion of monograph use occurs within the library and is not recorded in loan statistics. In other

TABLE 39

LOANS OF NON-BOOK MATERIALS COMPARED WITH LOANS OF MONOGRAPHS IN C.A.E. LIBRARIES IN 1974

Name of College	Non-Book Materials Loans	Monograph Loans
Armidale C.A.E.	587	27,431
Brisbane K.T.C.	2,700	57,700
Churchlands T.C.	8,343	41,664
Melbourne S.C.	28,304	103,603
Mitchell C.A.E.	7,412	80,935
Murray Park C.A.E.	3,014	99,257
Nepean C.A.E.	3,756	17,502
New South Wales I.T.	500	46,039
Northern Rivers C.A.E.	2,355	35,232
Queensland I.T.	192	35,165
Royal Melbourne I.T.	34,778	157,070
South Australian I.T.	1,055	68,679
S.C.V. - Ballarat	3,000	46,000
S.C.V. - Bendigo	1,500	30,930
S.C.V. - Frankston	9,930	64,800
S.C.V. - Rusden	13,744	93,243
S.C.V. - Toorak	342	74,620
Swinburne C.T.	1,295	159,325
Sydney T.C.	4,272	63,771
Tasmanian C.A.E. (Hobart)	8,641	60,547
Townsville C.A.E.	2,731	34,319
Western Australian I.T.	8,374	92,629
Wollongong I.E.	2,612	32,073

NOTE: Other colleges were unable to supply separate breakdowns of loans, but several stated that non-book materials loans formed an insignificant proportion of total loans.

college libraries, much or all of the non-book material held by the library is on open access in the same manner as for book and serials. In this case, we should expect the proportion of loans of non-books materials to be considerably under represented in the total - for two reasons:-

(a) Many audio-visual materials require equipment for their utilisation, to which most library users are unlikely have access outside the library (except for audio-tapes and records), and hence users are likely to confine their use to the library.

(b) A number of materials require relatively short periods of use, compared with the reading of a monograph, e.g. viewing a slide, map or print, and a user is unlikely to need to borrow the item.

A further caveat must be made regarding the type of use that is being made of non-book materials. Comments from librarians, observation, and an examination of the loan files in some of the libraries visited by the investigators suggested that a substantial proportion of the loans of non-book materials was being concentrated on audio-cassettes, tapes or records of music, being borrowed mainly for recreational purposes. This is not to imply that the provision of audio collections of music, is not a necessary part of the C.A.E. library's function. On the contrary, we hold the liberalising influence that a college library can exert to be an essential part of the C.A.E.'s role, as both vocational and educational in the widest sense. Nevertheless, it does suggest that, at least in some colleges, the provision of non-book materials may be less directly linked to course purposes that printed materials. With all these reservations in mind, it is possible to conclude that while overall, loans of non-book materials from a relatively small proportion of the total, in a few colleges the loans of non-book items are significant, both as a proportion of total loans and in absolute terms. In four of the colleges for which figures are available, audio-visual loans amounted to more than 20% of loans of monographs in 1974.

Level of Provision

As we indicated in Chapter 3, this pattern of usage of non-book materials gives us little help in determining an appropriate level of provision, and the differences between colleges in both existing provision and use are so large that we can explain them only in terms of the varying commitment to the use of such materials amongst library and academic staff. For this reason, and for the reasons referred to above, we consider that any recommendations should primarily be based on the existing experience of those college libraries which have gone furthest in their current provision of non-book materials. (In referring to 'college libraries' here we include 'resource centres' in those colleges where the production and provision of audio-visual materials is concentrated in a department administratively separate from the library. We do not wish to argue about the merits or otherwise of such a type of organisation, although we consider an integrated provision of all study materials to be desirable, unless particular institutional factors make this impossible. We merely make the point in order to emphasize that we are considering here the total provision of audio-visual materials in a college, owned by the college and available for individual or group use by students and lecturers.)

To base recommendations on current practice is to fall into the same trap for which we have criticised other investigators in our analysis of the literature - that current practice, even in the 'best' college libraries, does not necessarily indicate what is desirable. However, we feel that a considerable number of C.A.E. libraries still have virtually no experience in the provision and use of non-book materials for their clientele, and that it may be best at the present time for such libraries to build on the experience of those college libraries which have built up substantial non-book resources. We see it as highly desirable that a study should be carried out to determine the extent and kind of use of non-book materials that is being made by students and staff in a selection of C.A.E.'s that have substantial non-book resources.

In the meantime, we regard it as important that all C.A.E. libraries should provide at least a minimal level of provision of audio-visual materials. In some colleges, this may mean that the library is acting ahead of any immediate demands of teaching staff and students for such materials - but this would also be true of many print materials - any good college library will be anticipating the need for certain types of material and purchasing in advance of any expressed demand. As we reiterate in reviewing the published literature, supply of a wide range of library materials in itself creates a demand, if the existence of the material is known by its potential users. To recommend a basic provision of non-book materials implies necessarily that the college library should have adequate facilities for both storage and use of the materials. The basic equipment required for utilisation of tapes, slides, films, etc. must be provided ahead of any investment in the materials to be used. Paralleling this provision, the library needs to publicise the fact that audio-visual materials and equipment are available, and should attempt to work closely with teaching staff in stimulating both group and individual use of the materials acquired.

Talks with librarians involved in primary and secondary schools also suggest that students entering C.A.E.'s directly from school will increasingly have had everyday experience in using a wide range of audio-visual materials in schools, and this experience may be expected to lead to increased demands for, and use of, these materials at the tertiary level. Provision of an adequate basic range of equipment will allow this demand to be met as it gradually increases.

It is obvious from the statistics in Table 39 that no such stimulation would be required in some colleges - clearly students and staff have developed a substantial use of audio-visual materials, and the colleges must have a substantial range of the associated equipment available. We would hope that if a further study of non-book materials usage is carried out, the findings would also lead to specific recommendations on the level of equipment that should be supplied to promote an optimum use of non-book materials.

Conclusions

We find it impossible to specify provision of non-book materials in terms of volume of items, as for monographs and serials. In the first place, such a specification would require recommendations for each type of material - for audio-visual materials are not a homogeneous group. A slide is as different from an audio-tape as it is from a monograph, and serves a completely different purpose. But the specification of volumes of each type of item involves an assumption that no technological development is taking place. At present it is still necessary for most libraries to acquire several different types of audio-recording - cassette tapes, open-reel tapes, records (i.e. discs), and possibly cartridge tapes. Similarly, developments in the moving film field may make it necessary for a library to acquire two forms of 8 mm cassette films, cartridge loop films, open-reel films, etc. The ratio of material available in any particular format is likely to change considerably within a short time and invalidate any detailed specifications.

It might be possible to overcome this difficulty by specifying holdings in terms of 'x items of audio-recordings', 'x items of moving film', etc., using what might be called 'generic' groupings. However, it is doubtful whether a short 8 mm film loop, for example, can really be considered as equivalent to a large reel of 16 mm film. Granted that this is also true of monographs (e.g. can a 20 page pamphlet be counted as equivalent to a large encyclopaedia?), we are still left with the major difficulty that the use of many types of non-book material is highly subject dependant. The needs of one course alone might be enough to require several times the total provision for other courses of, say, maps (e.g. geography), audio-tapes (e.g. music), or slides (e.g. fine arts). Although there are indeed variations from course area to course area in the level of provision of print materials required, the differences are not of such a magnitude. All courses require access to monographs and serials, while it is difficult to conceive how some types of non-book material might be used effectively in various course areas (e.g. audio-discs in mechanical engineering, or 8 mm film loops in accounting courses).

Nevertheless, we consider that in every course area, one or other of the many kinds of available non-book materials has a role to play. Also, as we speculated above, we consider that audio-visual materials may have a considerable extra role, not directly related to course requirements, but providing an educational influence in the widest sense, and we feel that it is essential that a reasonable basic provision of such materials be made in all colleges, regardless of their subject range of courses. In the absence of any detailed empirical evidence relating to the use of audio-visual materials in C.A.E.'s, particularly for general course purposes, we are reluctant to recommend too high a level of provision. Many colleges may consider our recommendations below to be too timid - but they are designed to ensure only that all C.A.E. libraries are able to provide a base on which they may build with greater experience, once the real needs of their clientele have been established through the promotion and use of materials initially supplied, and after any findings from the study of non-book materials use that we recommend later in this report.

RECOMMENDATION 10. That all C.A.E. libraries include storage facilities for the full range of available non-book materials, so that the use of these materials may be easily promoted amongst students and staff.

RECOMMENDATION 11. That all C.A.E. libraries provide the associated equipment necessary to enable students and staff to use a full range of non-book materials. The minimum acceptable range of such equipment available in the library includes:-

(a) Slide viewer or projector

(b) Filmstrip viewer or projector

(c) Super-8 mm film projector

(d) Cassette audiotape player/recorder

(e) Video-tape player/recorder.

College staff and students should also have access to an overhead transparency projector, a 16 mm film projector, a television receiver and an episcope, but these may not necessarily be housed in the library. In larger college libraries further 8 mm film projection facilities, a cartridge and open-reel audio-tape player, a record (audio-disc) player, a radio receiver, and video-tape players for more than one format might be expected to be available.

RECOMMENDATION 12. That, pending the results of a recommended study of non-book materials provision and use, all C.A.E. libraries be provided with an annual fund for the acquisition of non-book materials of at least 10% of the annual funds to be spent on monographs and serials, arrived at after the application of Recommendation 3 (page 101), 5 (page 124) and 6 (page 170).

This 10% does not include any sum to be spent on the purchase of audio-visual equipment, nor on the production of audio-visual materials by staff within the college. This recommendation is a minimal one, and we should expect many colleges with courses having special requirements for non-book materials to spend more than 10% of the monograph/serials fund on such materials. This increased provision should not be at the expense of funds for monographs and serials as projected by Recommendations 3, 5 and 6.

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CHAPTER 8

SOURCES OF STUDY MATERIALS USED BY STUDENTS

Introduction

Clearly, students in colleges situated in country areas generally have a smaller range of accessible alternative library resources that may be utilised than students of colleges located in metropolitan areas. In a metropolitan area, C.A.E. students, and to an even greater extent C.A.E. staff, can expect to have personal access, at least for reference purposes, to a State library, to at least one, and perhaps as many as three, university libraries, other C.A.E. libraries, many public libraries, and perhaps some libraries of government departments, societies and other bodies. In many country towns, members of a C.A.E. may be able to turn easily only to public libraries, or perhaps the library of one other C.A.E. or technical college, when their own college library fails them. Even if there are other libraries in the vicinity of a country C.A.E., it is unlikely that in most cases they will be able to offer a reasonable range of academic-level library materials suitable for C.A.E. students and staff. Only in Armidale, Newcastle, Townsville and Wollongong do C.A.E. students in colleges outside capital cities have potential personal access to libraries which are likely to contain a superior provision of resources in many subjects than their own college library. Even in these towns, the access may only be potential, rather than actual, for undergraduate students, since not all university libraries allow access to students from other institutions. The level of access to any alternative library sources may, of course, vary considerably. Access may mean simply physical access for reference purposes, it may include partial rights to borrow some or all of the collection, or may involve full borrowing rights equal with those members of the institution that the library serves.

Students and College Library Use

As we note in our literature review in Volume 2, the work of Allen[1], Rosenberg[2] and others[3] has suggested that the searcher for information tends to act in such a way as to minimise the amount of effort involved in obtaining the information necessary to carry out the task confronting him, in an adequate (not necessarily the best) manner. This is generally considered to be one example of the application of Zipf's 'Principle of Least Effort', which is described in some detail by Fairthorne[4]. As our literature review indicates, college students use libraries primarily for information needed for course requirements. Students have a limited time available in which to obtain the information and reading material for which they perceive a need, as they tend to have a continuing flow of study tasks in relation to their course requirements. If any one study task is not dealt with within a fairly short space of time (probably of the order of 1 - 2 weeks for most course requirements in C.A.E's), then it must be dropped, because of the pressure arising from the need to complete other requirements that arise. This being so, the student is likely to use his own college library to obtain the information or material he requires only if one or more of the following conditions applies:-

(1) The college library is the only accessible source of the material required.

(2) The college library is the most convenient source of the material required.

(3) The student perceives the college library, as a result of previous experience, as the most likely and/or convenient source of the material required.

This has considerable implications for collection provision, in that the desirable level of provision in a college library is likely to be affected by the existence of readily accessible alternative sources of material required by students and staff, i.e. even were a C.A.E. library wholely adequate in its ability to supply wanted materials, it is likely that some members of the college would obtain material from other sources, because they find it more convenient to do so.

A few proposed standards for collection adequacy, such as those proposed for California State Colleges (see Appendix 1), and more particularly, the College of Education Libraries

Research Project[5] in the U. K., have tried to make allowance for the geographical location of colleges, on the grounds that shared use of library resources permits overall economies in provision. It should be noted also, that the existence of courier delivery services between libraries, which is possible in a metropolitan area, may speed up the average inter-library loan supply time in such a way as to effectively improve the adequacy of an individual college's collection.

Research Design

A study was conducted, therefore, with the primary aim of obtaining information on the varying extent to which students in colleges in different library environments used their own college library, and alternative sources, for materials required for course-related study. It was hypothesised that there would be significant differences between country and metropolitan colleges in the pattern of sources used. It was hoped that the information obtained could then be used to estimate any variations in quantitative provision needed for libraries in different geographical locations.

Since the extent of use of sources other than the college library, and the use of the college library itself, is likely to be related to the quantity of material sought by the students (e.g. if only a course textbook is required for a course unit, the use of any library by students for that course is likely to be minimal), a secondary purpose of the study was to obtain information on the extent to which more 'library-oriented' teaching methods might affect the adequacy of college libraries.

The design of this study presented a number of difficulties:-

(a) For statistical validity, any differences between metropolitan and country colleges should be explored using a national sample, with the student groups studied matched as closely as possible.

(b) For statistical validity, any studies of the use of libraries by students should be conducted over a considerable period of time, and ideally, over the whole of an academic year, since it is known from similar studies conducted overseas, that student use patterns differ throughout the year.

(c) There appeared to have been no similar studies conducted in Australia, with which the results might be compared, and hypotheses developed. All Australian studies have concentrated on the use of a single library.

(d) Even if the other three difficulties were to be overcome, any survey designed to elicit a relatively large amount of data from students was likely to face problems of response.

The methods that were adopted represent a compromise between the ideal and the practical, with the emphasis on the amount of useful data that could be gathered within the resources available, and that was practical from the point of view of those supplying the information.

Six undergraduate course areas were originally chosen for detailed study - programmes in accounting, architecture, chemistry, mechanical engineering, pharmacy and 'social science'. The six course areas were again chosen for the reasons outlined on page 75, to link in with the results of other studies related to the same course areas. At the same time, the substantial numbers involved in the areas chosen, allowed the project investigators to approach a relatively large number of students through their scheduled classes, with a minimum of scheduling problems. A further undergraduate area, physiotherapy, was added when the refusal of one college to co-operate in the study, in the area of pharmacy, required a redesign of the study.

After a short pilot exercise, the initial studies were conducted at the Western Australian Institute of Technology during the second semester of 1974. For each course area, a compulsory course unit was selected at random from the units offered in each year of the course (four years in the case of the architecture course). In a few cases, no compulsory units existed, and the sample was taken from those units in which at least 75% of the students in that year of the course were engaged. For each course unit, all students in class during two separate class periods, one in each half of the semester, were issued with a copy of Form A and Form B (see Appendix 6). The pilot study had indicated that a better response was achieved when students were contacted in small groups, such as tutorial sessions, than in a large lecture situation, and forms were issued to tutorial sessions, except where teaching staff indicated that, for some special reason, attendance was expected to be low.

The issue of these two forms was a combination of two techniques, both designed to produce data relating to the sources used by students, in the course units concerned, in order to obtain study materials needed in connection with each course unit.

(a) Form A represents a 'critical incident' technique. It was completed by all students in the class and collected immediately. Very limited information could be gathered by the use of this form, but the advantage was in achieving a 100% response from all students present. The other main disadvantage involved in the use of the form was that responses rely on students' memory of their last use of material, which may not be accurate. However, this is a drawback involved in any social survey technique involving questionnaires or interviews, relying on the ex-post facto collection of information.

(b) Form B represents a 'diary' technique which allowed the collection of information from students over a period of time. Students in the class were given instructions regarding the completion of the form, and were asked to complete details relating to items sought and/or used in connection with their studies in the course unit, of which the class was a part, during the one week period between the time of handout of the forms, and the corresponding class the following week. The questions relating to non-college library use on the final page of Form B were completed just prior to the return of the form. The 'diaries' allow the different patterns which may arise because of the need to use a greater amount of material to be studied. However, the technique suffers from two disadvantages. Some students inevitably forget to, are unwilling to, or are unable to return the form after one week, and the response rate may be expected to differ from one unit to another, which may affect results if response is dependent on particular student (individual or group) characteristics. Secondly, it is likely that students will forget to record details of some items used, so that the diaries will tend to under-record the amount of material used. The form A results were used as a check on any significant differences between respondents and non-respondents, by numbering and linking the copy of each form given to students. No overall significant differences in the proportions of sources used were apparent in the responses provided on Form A, between those who completed the diary questionnaires and those who did not.

In interpreting the results it is important to understand what the study does not purport to conclude:-

(a) The results are not necessarily valid for all students in all C.A.E.'s, or even all students in the course areas covered by the study.

(b) The results are not necessarily valid for all students at any of the particular colleges studied.

(c) The results are not necessarily valid for the course units covered over the whole academic year.

However, the study was designed merely to take a 'bird's eye view' of the behaviour of students in seeking study materials in different college locations, and how students in those colleges reflect their view of college library adequacy in their behaviour. The initial studies based at the Western Australian Institute of Technology (W.A.I.T.) were replicated during 1975 at five other colleges:-

(1) Bendigo Institute of Technology (B.I.T.)

Note: Now amalgamated with the State College of Victoria, Bendigo, to form the Bendigo College of Advanced Education.

(2) Gippsland Institute of Advanced Education (G.I.A.E.)
(3) Lincoln Institute, Melbourne (L.I.)
(4) Royal Melbourne Institute of Technology (R.M.I.T.)
(5) South Australian Institute of Technology (S.A.I.T.)

The four colleges (1) - (4) were chosen to represent a variety of country and metropolitan institutions, varying considerably in the range of courses offered, and yet situated within a relatively small geographical area, which could be covered easily by a single investigator, and offering studies in some or all of the course areas covered in the Western Australian study. The addition of the South Australian Institute of Technology resulted from the offer of considerable free assistance to carry out the study from the Library and the Department of General Studies of that institution, an offer which was accepted by the project investigators in order to extend the study to as many colleges as possible. However, the results from S.A.I.T. must be treated with some caution, since the study there was carried out with the assistance of students, and it was not possible to ensure that exactly the same conditions prevailed as with the other student groups studied. The particularly low response rate from S.A.I.T. students may have resulted from this.

At each of the colleges, course areas were selected only to match those studied at W.A.I.T., and from each of the course areas chosen, a unit from each year of the course was selected, as far as possible, so as to match for course content the units originally selected at W.A.I.T. (i.e. although the initial selection of units at W.A.I.T. was random, those in the other colleges were not selected randomly - it was hoped in this way to minimise differences arising because of level and subject of the units).

Results of Study

Complete responses were received from a total of 1,646 students and copies of the Form A were completed by 2,778 students, giving an overall response rate for the diary studies of approximately 59%. Considering that the form looked relatively complicated to complete, and that in some cases it actually required a fair amount of time to complete, we regard this response rate as adequate for the results to be useful. Figures 1.14 to 1.19 illustrate the overall pattern of sources used in each college. The groupings of results by number of items used vary slightly from college to college in the figures shown. This is to ensure that each category contained at least 5% of the total responses, and was not therefore too heavily biased by the responses of individual students.

The responses were grouped in relation to four types of sources:-

(1) Personal sources - to include items owned or bought by the students, or borrowed from another person on a personal basis.

(2) College library sources - to include all items borrowed from or used within any of the college's libraries.

(3) Other library sources - to include items borrowed from or used within any libraries other than those of the colleges at which the student was studying.

(4) Other sources - these include non-library sources, such as copies owned or made available by lecturers or tutors, or free copies supplied on request by government departments and other organisations.

The results indicate:-

(1) Sources and Type of Material Required

At all colleges, when very little material is used, personal sources (usually personally-owned copies of textbooks) are the main source of supply, as might be expected. In only one college, Lincoln Institute, was a higher proportion of items obtained from libraries than from personal sources, even in the lowest user categories (1-3 items used in the week). Closer examination of the results from Lincoln Institute suggested that this was because a much higher proportion of the material used at Lincoln Institute, during the period of the study, was in the form of periodical articles, obtained from the college library. In all

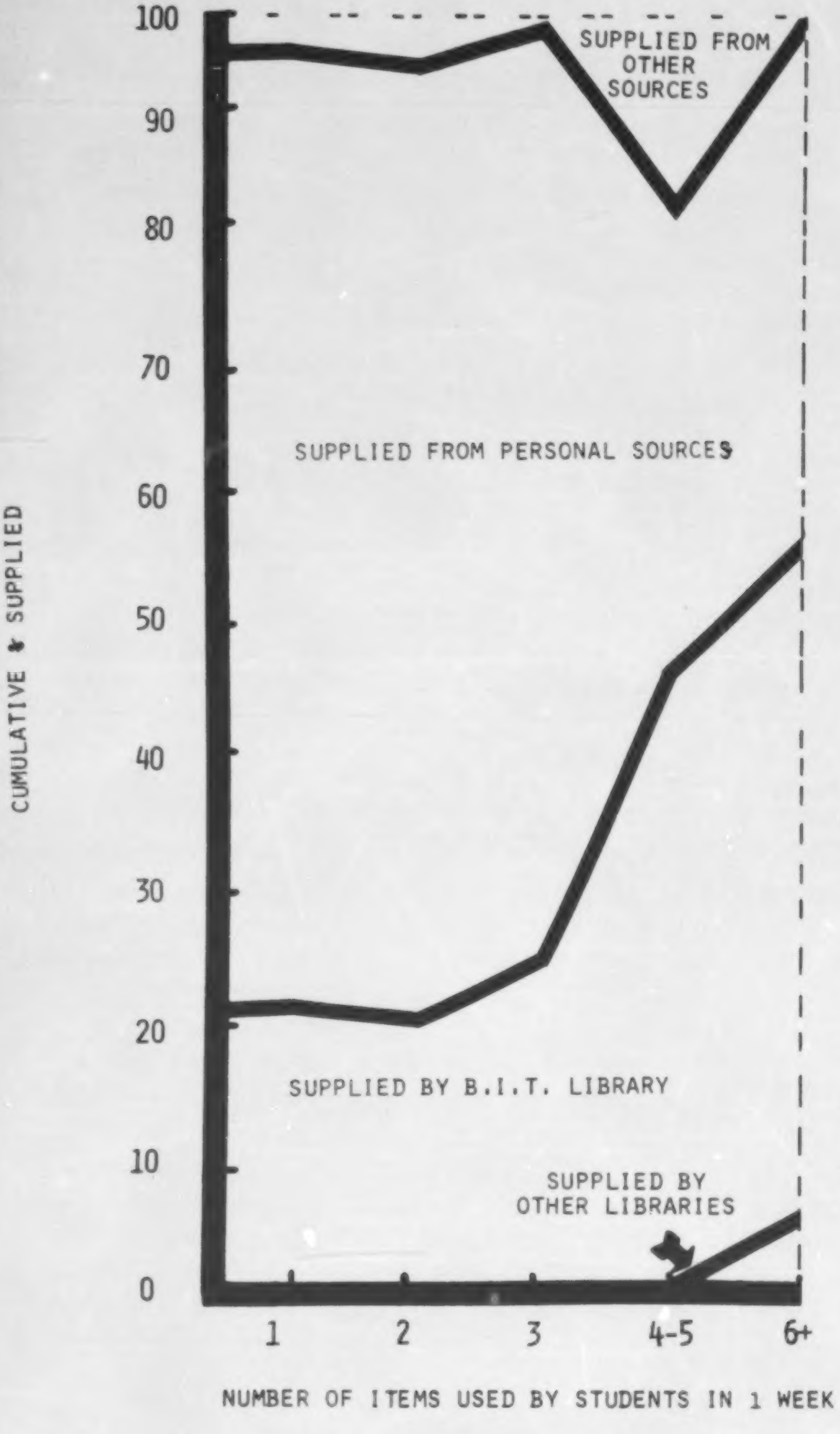
100
90
80
70
60
50
40
30
20
10
0
CUMULATIVE % SUPPLIED
SUPPLIED FROM OTHER SOURCES
SUPPLIED FROM PERSONAL SOURCES
SUPPLIED BY B.I.T. LIBRARY
SUPPLIED BY OTHER LIBRARIES
1
2
3
4-5
6+
NUMBER OF ITEMS USED BY STUDENTS IN 1 WEEK

FIGURE 1.14

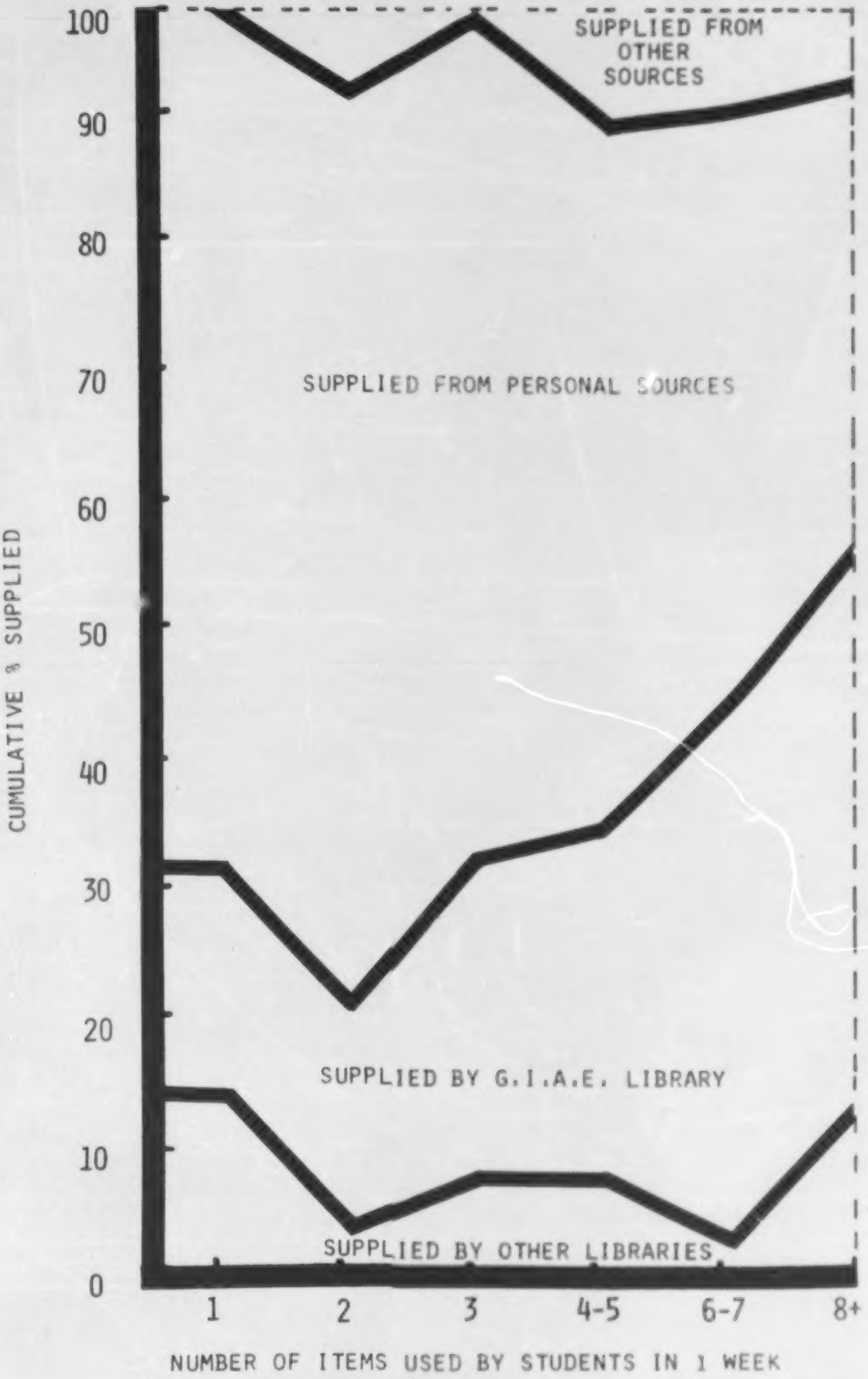
100
90
80
70
60
50
40
30
20
10
0
CUMULATIVE % SUPPLIED
SUPPLIED FROM OTHER SOURCES
SUPPLIED FROM PERSONAL SOURCES
SUPPLIED BY G.I.A.E. LIBRARY
SUPPLIED BY OTHER LIBRARIES
1
2
3
4-5
6-7
8+
NUMBER OF ITEMS USED BY STUDENTS IN 1 WEEK

FIGURE 1.15

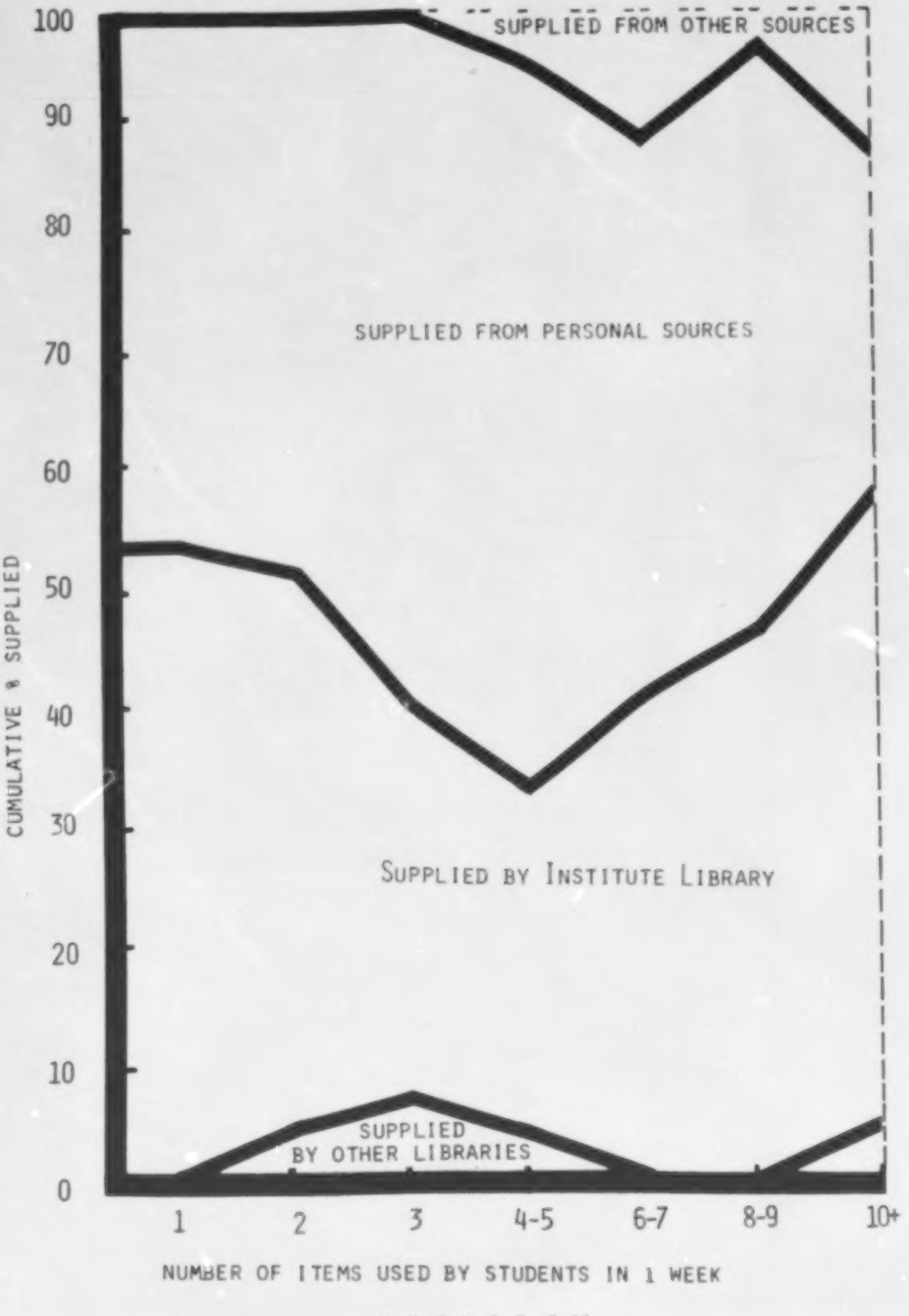
SUPPLIED FROM OTHER SOURCES
SUPPLIED FROM PERSONAL SOURCES
SUPPLIED BY INSTITUTE LIBRARY
SUPPLIED BY OTHER LIBRARIES
CUMULATIVE % SUPPLIED
100
90
80
70
60
50
40
30
20
10
0
1
2
3
4-5
6-7
8-9
10+
NUMBER OF ITEMS USED BY STUDENTS IN 1 WEEK

FIGURE 1.16

ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY

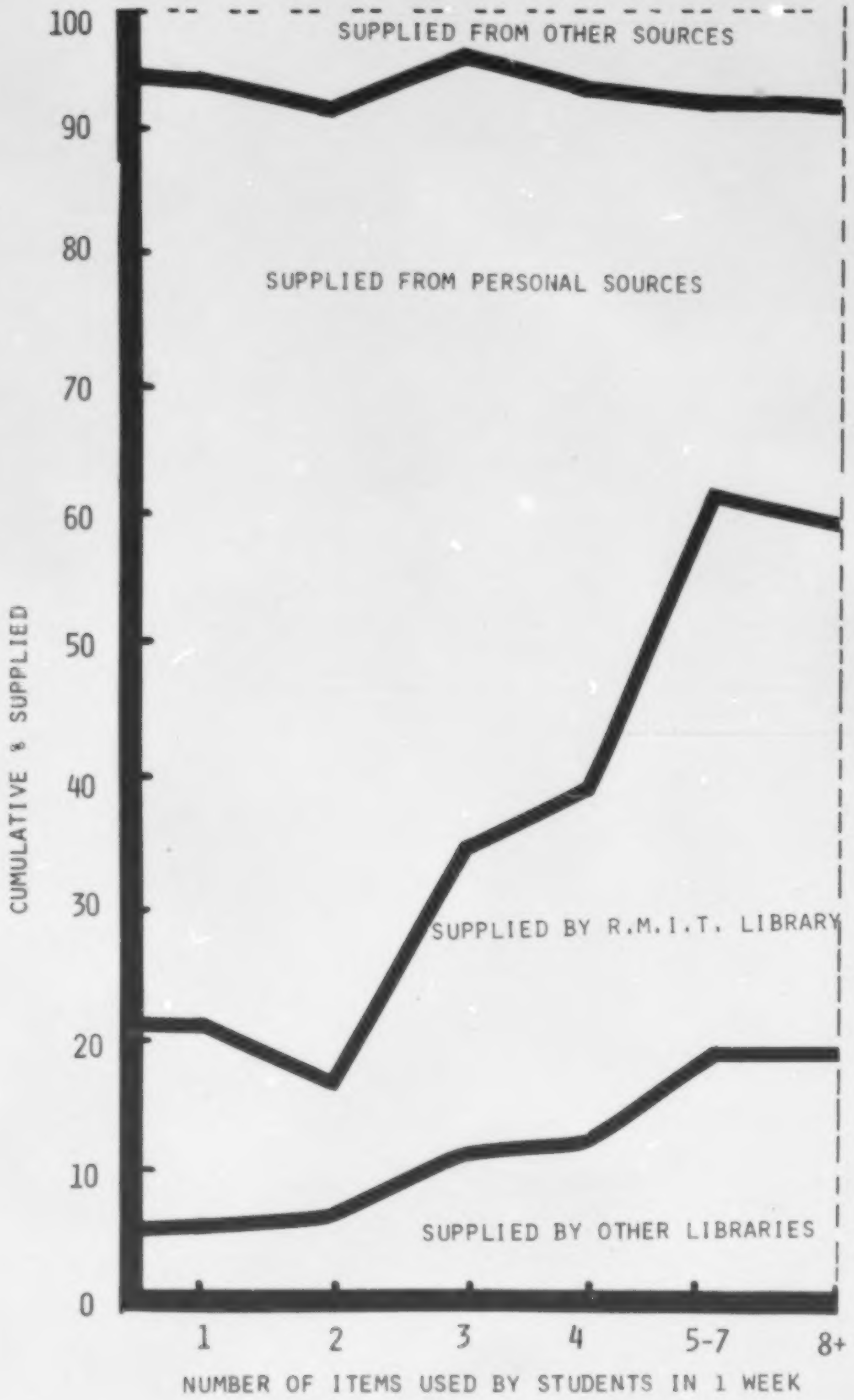

FIGURE 1.17

SOUTH AUSTRALIAN INSTITUTE OF TECHNOLOGY

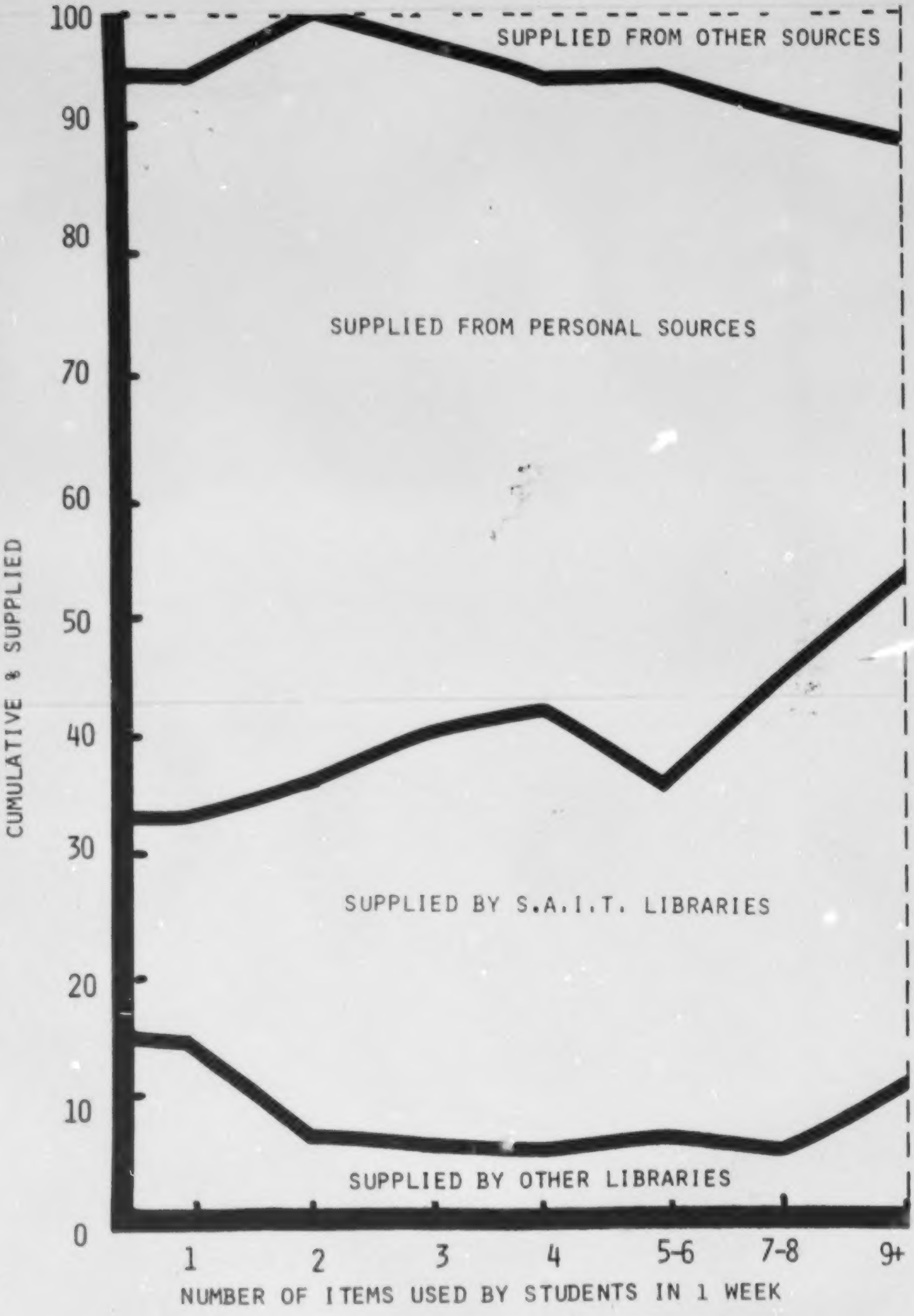

FIGURE 1.18

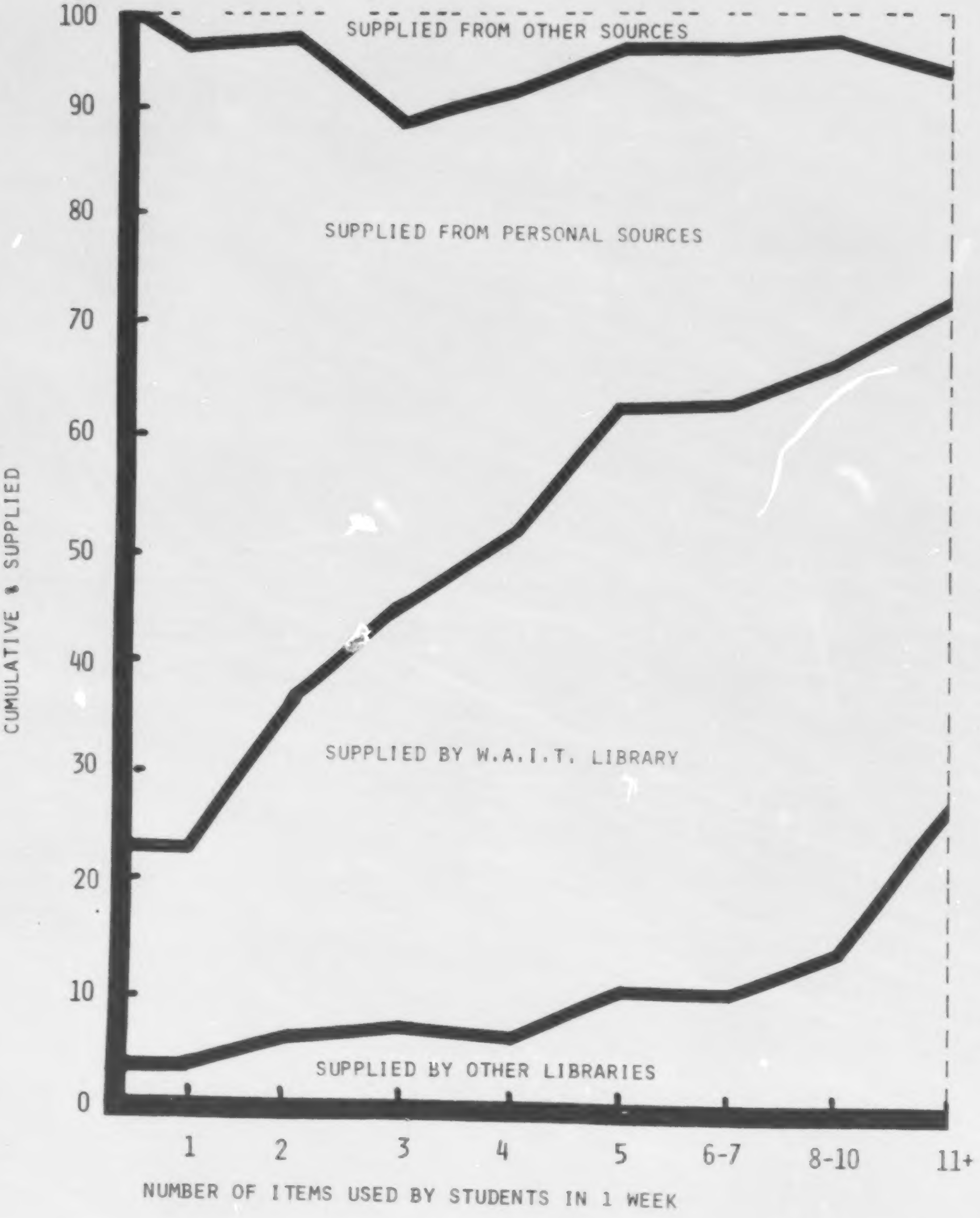
100
90
80
70
60
50
40
30
20
10
0
CUMULATIVE % SUPPLIED
SUPPLIED FROM OTHER SOURCES
SUPPLIED FROM PERSONAL SOURCES
SUPPLIED BY W.A.I.T. LIBRARY
SUPPLIED BY OTHER LIBRARIES
1
2
3
4
5
6-7
8-10
11+
NUMBER OF ITEMS USED BY STUDENTS IN 1 WEEK

FIGURE 1.19

other colleges the proportion of periodicals used in relation to monographs was very low overall, and negligible for the low user groups. This suggest that overall use patterns are likely to be heavily influenced by the *type* of material required, and that *if teaching methods are adopted which involve heavier use of the periodical literature, this will involve heavier overall use of the college library* (and possibly other libraries), since students will very rarely have access to periodical articles from personal sources, whereas they may own personal copies of a reasonable number of monographs. This is confirmed by an examination of the material used by the heaviest 5% user groups, of which periodicals provide a significantly greater proportion of the total items used (24.1%) than by the low user groups (5.0%).

(2) Sources and Amount of Material Required

At all colleges, there is an increasing tendency for the proportion of material supplied by libraries as a whole to rise, as more material is used within a week, and for personal sources to decline as a source of material. Again, this is not unexpected, since no student can be expected to own more than a small number of documents related to any particular course, and once these have been utilised, further information must necessarily be obtained from other sources, usually libraries.

(3) College Libraries vs. Other Library Sources

There is a tendency for the highest user group in all colleges to make relatively greater use of libraries *other* than the college library. There was a very clear trend at R.M.I.T. and W.A.I.T. for the use of libraries other than the college library to increase steadily with the amount of material used, and to a greater relative extent than the use of the college's own library increased. In fact, for the highest user group, the proportion of material obtained from the college library actually declined, suggesting that a threshold was being reacned at which students could no longer find relevant material in their own college's collection, and were being forced to use other libraries. The results from the other two metropolitan colleges are more difficult to interpret. Reasons for the unusual overall pattern of sources used at the Lincoln Institute have been suggested above. As regards Lincoln Institute students' use of other libraries, no significant variations occurred which could be related to other libraries used, and there was very low overall use of other libraries for all groups. This suggests that for material in the fairly specialised core areas of physiotherapy, the Institute's own library may be the best collection available in Melbourne, so that there would be no reason for students to try to obtain materials from other libraries, when their own library failed. At the South Australian Institute of Technology, although there was a tendency for the highest user group to make more use of other libraries, low user groups also obtained a significant proportion of their material from other libraries. Closer investigation of the individual responses from S.A.I.T. students suggested that this resulted from the peculiar situation of the S.A.I.T. campus at North Terrace, Adelaide, which is situated adjacent to the University of Adelaide and very close to the State Library of South Australia. Students apparently found it as convenient to use material in the University and State Libraries, as in their own libraries, and therefore much of the use of those other libraries was in no way related to the adequacy or otherwise of S.A.I.T.'s own library collection. For those students engaged on courses situated at 'The Levels' campus outside the centre of the city, a pattern similar to that at R.M.I.T. and W.A.I.T. emerged. If the responses for the metropolitan colleges as a whole are aggregated, students using a relatively large number of items make a significantly greater proportionate use of libraries other than their own college library than do students using a small number of items. However, no such conclusion can be drawn from the results from the two country colleges. The returns from Bendigo showed a negligible use of libraries other than that of the college, a proportion probably affected by the timing of the study, which was carried out very early in the second semester of 1975. Those from Gippsland show no obvious increase in 'other library' use with increasing amount of material used, probably because there is no alternative library in the Gippsland area which could be expected to be more adequate than the college's own library.

The reasons given by students for the use of other libraries were analysed with a view to determining whether the difference between 'high' and 'low' use groups was in any way related to the adequacy (or perceived adequacy) of their own college's library collection. Responses were categorised as being either:-

(1) 'Stock deficiency' reasons, i.e. where students obtained an item from other libraries because their own college library had failed to provide it, or where they considered that the other library was more likely to provide it.

or, (2) 'Convenience' reasons, where the item was obtained in the other library because it was more convenient or comfortable to do so than in the C.A.E. library.

The results for groups containing the 5% highest users were then compared with those for the users of two or less items in the week, and these are summarised in Table 40.

TABLE 40

REASONS FOR USE OF LIBRARIES OTHER THAN OWN COLLEGE LIBRARY

		Metropolitan Colleges	Country Colleges	All Colleges
Percentage of users quoting college library stock deficiency as reason for using other libraries	'Highest 5%' users	69.8%	66.7%	69.6%
	'Lowest' users	53.1%	54.5%	53.3%

The only college in which no significant difference occurred was S.A.I.T., probably because of the high rate of convenience in using alternative libraries for many S.A.I.T. students in 1975, which also may account for the relatively high overall rate of 'stock deficiency' reasons given by S.A.I.T. students for using other libraries (see Table 41) - given equally convenient libraries, students will tend to use the one with the most adequate collection. Whereas, if other libraries are not conveniently accessible, they may not be used at all, regardless of stock deficiencies in the college library. Taken overall, however, the results suggest that the college libraries studied were probably not wholely adequate to serve those students who required a considerable depth of material in a particular subject area, and that these students were having to, as far as was possible in the different locations, make use of other libraries in order to complete their studies to their own satisfaction.

(4) Sources and College Location

Although there is no significant difference between the country and metropolitan colleges in relation to the students' reasons for using other libraries, there is a considerable difference in the pattern of that use. Table 41 shows the pattern of use by the students in the various colleges. It indicates that the number of alternative libraries in an area is not necessarily significant. What is likely to be important is the convenience in using those libraries and whether the collections they contain are relevant to the students' needs (c.f. the patterns for students from Lincoln Institute and R.M.I.T., colleges which are situated within one kilometre of each other). That convenience plays a large part is illustrated by the high proportion of G.I.A.E. students, many of whom travel many miles to the college, using public libraries, even though individual public libraries in the Gippsland area are

TABLE 41

STUDENT USE OF LIBRARIES OTHER THAN OWN COLLEGE LIBRARY TO OBTAIN MATERIAL FOR COURSE PURPOSES

	BENDIGO I.T.	GIPPSLAND I.A.E.	LINCOLN I.	R.M.I.T.	S.A.I.T.	W.A.I.T.
Number of different libraries used	8	16	8	38	12	33
Proportion of items used in other libraries obtained from:						
University libraries	27%	4%	90%	30%	46%	37%
Other C.A.E. libraries	20%	6%	7%	10%	2%	6%
State Library	7%	2%	0%	13%	33%	21%
Public libraries	27%	72%	3%	23%	4%	26%
School libraries	7%	6%	0%	2%	4%	3%
Other libraries	13%	9%	0%	23%	10%	8%
Users of other libraries as % of total possible users	13.9%	34.7%	42.9%	26.6%	22.4%	33.5%
Users of University/other CAE/State libraries as % of total possible users	7.4%	4.4%	41.6%	16.4%	19.0%	29.7%
Users giving College library collection deficiency as reason for use of other library, as % of total users of other libraries	61.5%	56.5%	60.0%	48.5%	68.5%	55.7%
Users of university/other CAE/State libraries for reasons other than of convenience, as % of total possible users	4.5%	2.5%	25.0%	8.0%	13.0%	16.5%
Number of items obtained from university/other CAE/State libraries as % of items obtained from all libraries	1.7%	2.2%	5.5%	18.5%	10.6%	17.9%

unlikely to be able to offer as good a collection as G.I.A.E.'s own library in any subject area. If we consider, reasonably, that only university libraries, State Libraries, and other C.A.E. libraries are likely to present the average C.A.E. student with a more adequate collection than his own college library, then the problems facing the country college student become clearer by considering the percentages of students in each college using such libraries, in Table 41.

Conclusions

It was hoped that this study would produce useful information about the possible need for an 'isolation allowance', which it was hypothesized, might be required in C.A.E. libraries situated in locations where no adequate alternative library resources exist. The results of the Regional Colleges project[6], which became available long after this project was initiated, provided some confirmation for this hypothesis in revealing the difficulties faced by libraries serving C.A.E.'s situated outside metropolitan areas.

The difficulties referred to in relation to the design of the study prevent anything other than broad conclusions being reached. However, it would appear that approximately 10-25% of the study materials obtained from libraries by students in central metropolitan colleges may be obtained, of necessity, from libraries other than those of their own college. Correspondingly, in country colleges it is likely that less than 5% of the material supplied by libraries is obtained from libraries which present adequate alternative resources. Our study suggests, therefore, and admittedly based on very weak evidence, that it may be necessary to provide country college libraries with extra resources of the order of 10-15% in order to allow country students a reasonable equality of access to study materials with metropolitan students. In standards published overseas (see Appendix 1), geographical allowances suggested have been 10%, and up to 20%, and these figures provide some confirmation for our suggestion, although they appear to be based on even less reliable data than our own.

RECOMMENDATION 13. That, to compensate for lack of alternative library resources, all C.A.E. libraries situated more than 20 kilometres from the nearest university, other larger C.A.E., or State library, receive a resources allocation 10% greater than that which would apply from the application of Recommendations 3, 5, 6 and 12.

The college libraries which, in our view, would come within the scope of this recommendation, as at 1st January 1977, are listed in Appendix 9.

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CHAPTER 9

COSTING FOR LIBRARY ACQUISITIONS

Introduction

In our analysis of the literature in Volume 2, we reviewed in some detail the problems involved in any attempts to forecast average costs of provision of monographs and serials, for the purposes of library collection budgeting. We indicated the peculiar nature of the purchasing pattern for library materials, in which a high proportion of acquisitions are obtained from overseas, so that average acquisition costs in C.A.E. libraries are largely determined by price movements outside Australia, and by movements in rates of currency exchange.

As we indicate in Volume 2, there has been a consistent tendency, in all the major countries involved in the supply of books to C.A.E. libraries, for the price of both monographs and serials to rise faster than the general rate of inflation. (Whether this tendency is also true for non-book materials is unknown. We have been unable to find any data on trends in non-book material prices. However, we suspect that the rate of price inflation for any particular form of non-book material may not have been as great as for print materials, because increased sales and technological advances may have allowed economies of production. However, this is speculative, and may be outweighed by the introduction of new forms of materials whose average price is higher than previous forms, e.g. video-cassettes.)

This means that the application by colleges, and by the Commission on Advanced Education, of any cost supplementation for library purposes based on general indices of recurrent or capital costs, is likely to disadvantage libraries if applied over the long term.

As we conclude in our literature analysis, on page of Volume 2, we cannot see any alternative to the development of a separate index of library materials costs, which could be utilised for budgeting and any supplementation purposes. We consider that any index should be based primarily on the movement in actual average prices paid from year to year by C.A.E. libraries, because of the problems of differing rates of inflation in various countries and exchange rate fluctuations.

However, to avoid the problem of the actual average price paid being less than the desirable average price, particularly in smaller colleges which may be unable to afford various very expensive items, the index should be based only on data regarding price movements in larger tertiary libraries, which are less likely to be affected by such difficulties. Also the index should take into account general price movements for monographs and serials as revealed in published sources in Australia, the United Kingdom and the United States.

We foresee this index, if developed, being of considerable use to libraries and administrations in C.A.E.'s, who would then be able to apply greater precision in the necessary costing of the annual acquisition programme for monographs and serials in each college, based on the quantities resulting from the application of the formulae derived in Chapters 4 to 8.

However, in the case of libraries of monovocational colleges, because the average cost of serials and monographs varies considerably from one subject area to another, it is unlikely that any general cost averages would necessarily be applicable to libraries in these colleges. We recommend that monovocational colleges should apply their own average cost movement data, if they are disadvantaged by the application of a general index of cost movements.

As we suggest in Volume 2, pages 79 to 80, it seems likely that any indices developed would be subject to considerable fluctuations from year to year according to changes in the rates of exchange of the Australian dollar with the currencies of the main book supplying countries. As these fluctuations are almost impossible to predict for budgeting purposes, it is our opinion that any index should reflect movements in a 'rolling three-year average' of costs, rather than simply actual movements from year to year. However, we should expect the Commission to have access to appropriate statistical advice, should it follow our recommendations below, and alternative approaches to the problem should be explored. The Commission's attention is drawn also to the existing United States standard for the compilation of price indices for library materials[1].

RECOMMENDATION 14. That the Commission on Advanced Education, in conjunction with the Universities Commission, develop indices for changes in the average cost to Australian tertiary libraries of (a) Monograph Volumes, and (b) Current Serial Titles, and that the derivation of this cost data be based primarily on annual movements in actual prices paid by a sample of the libraries of large multidisciplinary colleges and universities in Australia.

RECOMMENDATION 15. That the Commission on Advanced Education, in conjunction with the Universities Commission, consider the means by which data regarding average acquisition costs of various types of non-book materials may be obtained, and develop a guide, for use by tertiary libraries to determine appropriate funding, when more detailed recommendations of the desirable level of provision of non-book materials are available.

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CHAPTER 10

AVAILABILITY OF LIBRARY MATERIALS PROVIDED

Introduction

The work described in this report thus far has concentrated on the need to specify adequate levels of *input* of materials to C.A.E. libraries. This has been because we strongly believe, and are supported in this belief by the considerable weight of evidence in the published literature we have reviewed, that unless C.A.E. libraries receive a continuous and substantial input of new materials to meet their developing course needs, then any measures taken *within* an individual library can improve the adequacy of the library's collection only to a limited extent. *If the rate of input to a collection is inadequate, then the collection will remain inadequate, regardless of the efforts and expertise of library staff*. To quote the Association of College and Research Libraries Standards once again, "... it is not possible to have quality without quantity defined in relation to the purposes of the institution".[1]

Nevertheless, as we indicate in our literature review in Volume 2, we consider that not enough attention has been given by librarians to maximising the utility of the items which they acquire for their collections. If the collection is to be used to its fullest extent, then three factors will be present:-

(a) Potential users will have been stimulated to make as high a *demand* rate as possible on the collection.

(b) The library will have developed its procedures so as to allow the highest possible rate of *availability* of items in the collection, consistent with the needs of readers to use material both within and outside the library.

(c) The collection acquired will be of a high *quality* - in the sense that the individual items selected *do* in fact meet the underlying needs of potential users. This problem is discussed in detail in Chapter 11.

Stimulation of Demand on a Collection

We considered in some detail on pages 54 to 65 of Volume 2, the factors which have been found to affect demand, and concluded that those which in practice most affected the demand rate on the library were largely outside the control of library staff, and were mainly linked to the teaching and learning methods being employed in a college. We do not feel that it is within the scope of this report for us to make detailed recommendations regarding teaching methods by which demand on a library's collection may be stimulated, nor to enter into any argument over the educational desirability of employing various forms of teaching method.

However, the Commission itself has given support to the development of teaching methods which may move away from the traditional college lecture and laboratory approach.[2,3] Also, our statistical study in Chapter 3 concluded that, for whatever combination of reasons, per capita use of C.A.E. libraries has been rising fairly continuously in recent years, i.e. the demand rate on C.A.E. library collections is being stimulated. We should, therefore, expect that all colleges would have given some attention to the following points:-

(1) That all teaching staff are aware of potential benefits to be derived from the use of library materials in conjunction with students' learning programmes, and that they encourage students to utilize relevant materials, with their guidance, and on the students' own initiative. It has been the clear conclusion of the majority of library use studies we reviewed that this encouragement is vital if a college's investment in library resources is to be adequately reflected in terms of use.

(2) That college library facilities are conveniently situated for the majority of potential library users, and that the library itself is a pleasant, comfortable place in which its collection may be used, with adequate space for both the collection and readers. Again, there is a clear indication from the published literature that much of the investment in library collections in tertiary

libraries will receive an inadequate return in collection usage, unless the collections are housed in conveniently accessible, inviting buildings.

(3) That each library has available sufficient and suitable staff, who are able to promote the use of library materials and services. This promotion would include programmes of reader education, adequate display facilities, and notification (and/or circulation) to teaching staff of new library acquisitions, and details of newly published material.

There is now available a considerable amount of literature (e.g.[4,5,6,7]), on methods of promoting library use in tertiary institutions, and we commend librarians to these publications. However, the main difficulty in many C.A.E. libraries is not lack of knowledge of available techniques, but lack of staff who may be allocated to these activities. Our visits to college libraries suggest that many C.A.E.'s are simply unable to devote sufficient library staff resources to reader service activities, involving liason with teaching staff and students, which would result in increased use of the collections available. The generally unfavourable staffing position vis-a-vis that pertaining in Australian university libraries, which is shown in Table 42 on page 244, partly reflects staff shortages for these activities.

We would stress again, as we conclude on page 54 of Volume 2, that the adequacy of a collection to meet readers needs cannot be accurately assessed unless readers have been stimulated to translate those underlying needs into demands on the collection.

Increasing Availability of a Collection

The studies described in our review of the literature, and the results of our own Document Delivery Tests, show quite clearly that the effective availability of items to users of a tertiary library may be as low as 50% of the collection theoretically owned by the library. This is a finding of some considerable importance in relation to collection provision. It indicates that it may be possible for a C.A.E. library to increase the effective size of its collection by procedures which increase the availability of materials within that collection. For example, if a large C.A.E. library containing 100,000 relevant volumes is able to increase the immediate availability of material demanded from 60% to 70%, this effectively increases the size of the collection by 10,000 volumes, the acquisition costs of which might well be of the order of $150,000 or more. This finding does not mean that the library should necessarily be able to reduce its acquisition costs. It does mean that it may be able to provide an equally effective service in the longer term with a somewhat smaller collection, if it devotes sufficient attention to some of the ways of increasing the availability of items after they have been acquired.

Some of the reasons for 'unavailability' of items in a collection are unavoidable - indeed they are desirable, if materials are to be used at all. Few would argue that a college library should not lend its books for use outside the library, yet every time a book is loaned, it is unavailable for other readers during the period of that loan. Similarly, it is generally considered desirable for many serial titles to be bound into volumes, yet whilst away at binding, all such issues are also unavailable. Nevertheless, there are procedures which libraries can adopt to reduce unnecessary unavailability of material in their collections, and it is incumbent upon college librarians to adopt these measures.

Reader Failure

As our literature review clearly indicates, some of the 'unavailability' of material experienced by potential college library users results from their own inability to find their way through the library's retrieval system. This problem has been labelled by Line[8] as 'Reader Failure'. It is impossible for the library to overcome this problem completely, but it can do much, given sufficient availability of staff to concentrate on reader education programmes, informal assistance to readers at the catalogue and in searching, and clear self-guidance systems around the library and at the shelves.

Fairly simple factors have been found to decrease the user's ability to find wanted items, such as creating unnecessary sequences of materials, breaking shelving sequences in a way that is not obvious to the average user, an unnecessary multiplicity of information in catalogue entries, out-of-date library floor plans, complicated shelf-marks, lack of guide-cards and adequate cross-references in the catalogue, and failure to include in the main catalogues an indication of the location of various groups of materials, such as items in a reserve collection, documents in process of cataloguing or recently catalogued, serials, or non-print items. These are all basic system failures.

Our visits to various college libraries suggest that many libraries have simply not given enough attention to ways of reducing reader failure. We recognise that lack of available staff time inhibits review of these problems, but it strikes us as odd that many libraries are devoting a substantial proportion of their staff resources to the formation of detailed cataloguing entries, which merely indicate that the library owns an item, while virtually no efforts are being made to assist users actually to find material on the shelf.

We consider that attention to some of the details referred to above will reduce frustration considerably. In particular, we suggest that, during the next available period when library usage is relatively low, each C.A.E. library should conduct a review with the aims of:-

(a) Improving its system of guiding readers to the correct shelf location that they are seeking.

(b) Ensuring that its catalogue and document retrieval system includes clear instructions relating to its use, at the points of reader access, and includes clear and adequate location information relating to all material owned by the library, including all special collections, material held in special separate locations, and material newly received and/or in process of preparation for users.

Together with an reasonable supply of staff available for the purpose of reader education, both to formal groups of students, and informally with individual students at the time of need, we consider that these measures can effectively improve the practical availability of material to readers by a significant margin.

Collection Failure

However, attention to the problems resulting from readers' use of the collection is likely to be of more importance in maximising the availability of material in C.A.E. library collections. Results of 'failure surveys' and 'document delivery tests' suggest that the main reasons for unavailability of items owned by a library are:-

(a) The item is on loan to another reader.

(b) The item cannot be located (i.e. it is either missing, or misplaced in the library).

(c) The item is in process of being handled by library staff - either in process of reshelving, cataloguing, or binding.

(d) The item is held in a branch library, other than the one at which the reader is searching, and to which he has no effective practical access.

(There may of course be a substantial amount of failure to find items sought, because the library has never acquired them in the first place. Most of our work up to this point has been directed to overcoming this problem.)

Items on Loan

Items unavailable because they are on loan inevitably form a significant proportion of the total unavailable items in any library which serves a relatively large number of readers. Other things being equal, the proportion of a library's collection on loan at any time will be determined by the ratio of volumes in the collection to the number of readers served - the fewer the number of books per capita, the larger the proportion of the collection on loan at any time. Since our recommendations in Chapters 4 to 7 have suggested that there are significant economies of scale in library collection provision, because of the need to provide a certain basic minimum for each course, regardless of the number of students involved, it is the larger colleges that will need to concentrate most on optimising their loan system. However, even in small colleges, attention to this problem can be expected to reap some dividends for the user.

We have discussed the problem of the length of the loan period and duplication rate in some detail, in our literature review in Volume 2, and we repeat only that libraries must consider the optimum length of loan period for an item, and whether it should be held in more than one copy, primarily in terms of the demand for the item. In practice this means:-

(a) There should be no differences in the length of loan period allowed for different classes of user, differences should relate only to the likely intensity of use of each item. We can see little justification for the continuation in many C.A.E.'s of the practice whereby teaching staff are allowed to borrow all items for considerably longer periods than are students, whether or not the material is in relatively heavy demand. This is a practice which is gradually dying out in other tertiary institutions both in Australia and overseas, and we feel that C.A.E. libraries should follow this trend.

(b) There should be a sequence of differential loan periods for material, depending on the demand rate for each category of material. Clearly, in the operation of such a system, a compromise must be made between the ideal and the practical. Staff time is involved in any transfer of material from one loan category to another, and the extent of necessary transfers must be optimised.

We consider that in most C.A.E. library situations, there is likely to be a need for three categories of loan period. For the category of material in heaviest demand, there is a need for at least one copy of an item to have a very short loan period during the hours that the library is open. We suggest that this may be achieved either by confining copies to 'within-library' use only, or by placing copies in a closed-access 'reserve' situation, from which items are lent for, say, 2 - 3 hours to each reader (or for longer periods when the library is closed). Both suggestions have their drawbacks, but they are probably the only means whereby a library can meet peak demands for particular works without very high rates of duplication.

There is also a case for a medium length of loan period for some items which are likely to be in moderately high demand. This would include all items on lecturers' lists of recommended reading to students, works for which multiple reservations have been placed, and many recently-acquired works obviously directly relevant to particular current courses. In general, we should expect a copy of any item bought in multiple copies to be in this category. A one-week loan period seem suitable, and would be adequate to meet the needs of part-time students - for whom the very short loan category may be of limited usefulness. We should expect perhaps 10% of a larger library's collection to have a loan period of one week or less.

For the remainder of the library's collection, there is no reason why a much longer period of loan should not apply, if combined with an ability to recall items on loan. Buckland's findings,[9] backed up by the more recent work by Shaw,[10,11] suggest that there is little advantage to the user in having an initial loan period as long as a term or semester, and we would suggest that a suitable loan period for the majority of a C.A.E. library's collection might be four weeks, which would meet the great majority of needs of all categories of reader, staff or student. After an initial four week loan period, a loan may be renewed if necessary, and if the item is not required for another reader.

Loan Periods and External Students

This consideration of loan periods excludes the particular needs of external students, who may require documents to be posted to them. We consider that any C.A.E. which serves significant numbers of external students has no option but to have available multiple copies of a significant number of items which are lent for a period of at least four weeks (including postal delivery times both ways). In saying this, we consider that 'external' students who borrow from the library in person should normally do so on the same basis as internal students. Also, if a separate 'external students collection' is established, all items in such a collection should also be available to internal students under short loan conditions, if the use of the collection is to be maximised.

We consider that in most colleges serving external students, unless a very large number of external students are involved, there are likely to be economies in the necessary provision of multiple copies if 'external loan' books are integrated with an 'reserve loan' system for internal students. However, there has been virtually no research carried out on the best ways of supplying recommended reading materials to external students, and optimal loan periods for external students. We suggest that research in this area should be considered as a priority for the Commission, in the light of the expanding proportion and numbers of external students in C.A.E.'s.

Use of Loan Records

In moving items from one loan category to another, loan and reservations records should be utilised if possible. In recent years, with the introduction of computer-based circulation systems in many tertiary libraries, there has been considerable progress made in the use of records of items borrowed as an aid in the selection of library materials.

The time-consuming and labour-intensive operations involved in any analysis of loans in a manual circulation system may be obviated by designing a computer-based circulation system so it may provide regular feedback data on the use of documents, for management purposes. A good description of the potential in this area is shown by the recount by Simmons[12,13] of developments at the University of British Columbia, while some Australian universities and colleges, such as the University of New South Wales, also now have experience in the uses of circulation data as a feedback device.

We consider that it is likely that many of the medium and large-sized C.A.E. libraries will develop computer-based circulation systems during the next few years, and we regard it as essential that, in these developments, sufficient thought is given to ensuring that any system developed is able to supply regular feedback data useful in identifying demand rates for individual titles, and categories of material. This data may be applied to several different purposes, such as changing the length of loan period for heavy demand items, identifying titles for possible discarding, or for the purchase of extra copies, identifying subject areas of low or high demand, etc. All this data may be useful in the selection process.

Unlocatable Items

Unlocatable items were found in some of our Document Delivery Tests to account for a greater proportion of unavailable items than any other category (see Appendix 5), and this situation has also been found in a number of failure surveys conducted elsewhere. The most common reasons for documents not being locatable as on the shelf or on loan (in spite of considerable efforts on the part of the library staff), are that they have been stolen by readers (sometimes only temporarily - for the period for which the items are useful to them), or else have been mis-shelved within the library (either accidentally or deliberately - the latter is a well-known ploy of readers who wish to reserve an item for their sole personal use). Few C.A.E. libraries have any detailed statistics relating to missing items, but our own tests suggest that in larger colleges several thousand volumes may be unaccounted for at any given time. When it is realised that missing items will tend to be those in heavier demand (readers generally do not steal books for which they have no use!), the loss must be regarded as significant.

Some librarians appear to take a fatalistic attitude to this loss, maintaining that measures to prevent loss are more costly than the cost of items which are stolen. We do not believe that this is now the case, except for the smaller C.A.E. libraries, particularly if the costs of acquisition and cataloguing are taken into account. But we consider that the user cost in unavailability of material is more significant than the replacement cost to the library. We accept that a determined thief will succeed in overcoming any security measures which may be devised. However, visits to some libraries suggest that lack of attention to security is resulting in a positive disservice to their clientele. 'Casual' theft, or unauthorized borrowing, may be reduced quite easily, and may result in a significantly improved availability to readers of some items in heavy demand. A document may only be missing for a week for it to be effectively missing for the whole year from the student viewpoint, if the item is required only for preparation of a particular tutorial or assignment. We would urge all C.A.E. librarians, particularly those who may not have checked recently on the extent of unlocatable material in their libraries, to reconsider their security measures with relation to the user inconvenience and frustration that may be involved if items are missing, even if only temporarily. Our recommendations regarding the use of the failure survey, later in this Chapter, would identify the real extent of this problem in periods of relatively heavy library utilisation, far more than any annual 'stock check'.

Apart from reducing losses, libraries can contribute to the reduction of unlocatable items by more attention to the problem of mis-shelved items. Staff responsible for re-shelving of material should have enough time available for regular programmes of shelf-scanning for items not in their correct place, and they should be encouraged to automatically scan each shelf at which they re-shelve items. Individual serial issues are particularly prone to mis-shelving by readers, and regular scanning of serial sequences is important.

Attention to re-shelving procedures in general can also improve collection availability by a significant margin. In the larger C.A.E. libraries, the number of items requiring re-shelving each day during term, after use within the library, or on return from borrowing, may run into thousands. Once again, when we consider the tendency of students to require material on the same topic at the same time, an effective increase in availability of wanted material may be made simply by organizing re-shelving of material as rapidly as possible throughout the day. Items in some libraries may be used by a reader for a few minutes, left on a table or in a carrel, and then remain there, unlocated by other readers, for up to 24 hours.

Serials Unavailability and Binding Procedures

In relation to serials, a major loss of availability is often caused by the fact that libraries remove relatively current issues from the shelves and send them away to be bound into volumes. Depending on the availability of bindery facilities in a particular locality, this may mean that serial issues are unavailable for up to 3 months, at a time when they have a relatively high likelihood of being required by readers. The time at which items are removed for binding is usually a compromise between the need to keep current issues available, and the realisation that there is a greater likelihood of loss of a particular issue, the longer unbound issues are left on the shelf. There have been very few useful studies[14] which provide information on the scheduling of material for binding, and we find some difficulty in advising librarians on this problem. However, the general rule to be followed is not to send material for binding at a time when it is likely to be in heaviest use.

We are aware that the commercial bindery facilities available to many colleges are by no means ideal, and we feel that it is worth the consideration of colleges in each State to consider the cooperative establishment of bindery facilities, perhaps in negotiation with university libraries. Without a detailed study of the economics of such an operation, we cannot make any specific recommendation, but we consider that binding facilities under some direct control by college libraries may result in a higher standard of service than currently exists in many areas.

Although the establishment of 'in-house' binding facilities, whether on an individual library or cooperative basis, may be difficult, if only because of the apparent shortage of trained bindery staff in Australia, we feel that there is considerable scope for individual libraries to employ greater use of various forms of 'temporary' binding, such as thermobinding, rivet binding, etc. For C.A.E. libraries, in which the role of preservation of materials for future research is relatively small, less permanent and cheaper forms of binding have a considerable role to play, particularly in the binding of serials likely to be in relatively low use. Much greater use of temporary binding techniques has been made in libraries of commercial organisations, and we consider that all C.A.E. libraries should investigate the possibilities in this area.[15,16]

However, whether commercial or 'in-house' bindery facilities are being used, we consider that an improvement of serial availability may be made by:-

(a) Negotiating with the bindery for designated 'heavy use' titles to be bound as a priority task and returned within a few days. A small extra charge for such a service would, in our opinion, be acceptable and worth the benefits it may provide to users.

(b) Negotiating with the bindery, for issues requested by readers, which have already been sent for binding, to be bound immediately on request and returned to the library as a special delivery. Again, a small charge for such a service is reasonable and acceptable.

(c) Minimising the time for which serial issues are removed from the shelves 'waiting to go to binding'. This appears to be a significant length of time in many colleges, and is generally unnecessary.

(d) Attempting to send a relatively greater amount of material for binding when its use is likely to be lower, but at the same time allowing for the fact that commercial binderies may be subject to peak loadings, and therefore, slower delivery times, because many tertiary institutions send greater volumes of material at the same time. It is essential that good communication be maintained between the library and a commercial bindery.

It is possible that the courier service, which we refer to below, might be extended to include deliveries of wanted materials to and from a bindery, in some capital cities.

Library Cooperation and Availability

We have said relatively little about the possiblities of cooperation between libraries in improving the availability of materials for users. This has been because we consider that for the needs of the majority of users of C.A.E. libraries there is no substitute for local college ownership of a large proportion of documents required for study purposes. Although cooperative acquisition programmes and inter-library loan services may be of significant benefit for research workers and, to a lesser extent, for teaching staff, the limited time period for which most items remain useful to undergraduate students means that such services are of limited overall usefulness to students, unless they have very rapid access to items requested. Even if such rapid access is available, inter-library loan services are only of benefit where a known item is required. Since for many student purposes several documents on the same topic may be interchangeable, the lack of browsing access to non-local collections is a severe drawback for students.

Courier Services

However, we do consider that the introduction of a rapid courier service running between college libraries in metropolitan areas would provide material sufficiently quickly to be of significant benefit to all college library users. Ideally, such a service should run between C.A.E. libraries, university libraries, and the State Library in each capital city, as already is the case in at least two State capitals. However, if such an arrangement cannct be negotiated in the first instance, cooperative financing of a courier operation should be considered by the C.A.E.'s alone.

Such a courier service might either be a 'library-dedicated' service, carrying only material between libraries of institutions, or it might be a general service, in which library materials are carried along with other materials for inter-institutional transfer. The decision is likely to rest with the total volume of library materials transferred in each metropolitan area. We believe, however, that there may be some advantages in a library-dedicated service, in which the courier operator also retrieves most items from the shelves in each library, thus relieving other library personnel from much of the operation.

Access to Inter-Library Loan Services

If a courier service is to be utilised to its maximum extent, then college libraries and their users must be aware of the holdings of the other cooperating libraries, and the provision of union catalogues, copies of the printed catalogues of individual libraries, and future on-line access to computer-stored catalogues are all developments which we see as assisting a greater inter-availability of collections. It goes without saying that the provision of any inter-library loan service is of no benefit to a potential user who is denied access to the service. It appears that in some colleges, a majority of students are unable to utilise the inter-library loan service, which is reserved for the use of teaching staff, and perhaps some particular categories of advanced-level students. We are aware that shortage of library staff is the reason for such restrictions, but we can see no justification for them, and we urge all C.A.E. libraries to provide inter-library loan services to all their users. In our experience, the drawbacks involved for students with inter-library loan supply times mean that, with careful monitoring of requests, there is no reason why most colleges should not be able to handle the volume of requests made by students.

Access to Other Libraries

However, we regard access of students and staff to libraries other than that of their own college as more important than access to inter-library loan services. As our study of sources of material used by students showed in Chapter 8, students in C.A.E.'s, particularly those in metropolitan areas, are currently making a considerable use of other libraries. Apart from borrowing from public libraries, most of the use of other libraries is likely to be confined to use within the libraries. It is probable that at present, the use of many university libraries, and perhaps of other C.A.E. libraries, by students of a number of C.A.E.'s is in fact without the approval of those institutions, but with their tacit acceptance, because of the difficulties of policing entry to tertiary libraries. We consider that there would be significant advantages to C.A.E. students, and an overall increase in both the availability and utilisation of C.A.E. library collections as a whole, if all C.A.E. students had full access to the libraries of all C.A.E's other than their own, and to the libraries of universities, for both within-library use and for borrowing.

We recognise that in practice there are a number of barriers to the complete interavailability of collections in tertiary libraries. Nevertheless, we do not believe that these barriers are insurmountable, given enough good will on the part of cooperating institutions. The most important barrier is likely to be the fact that inevitably some libraries will tend to be 'givers' and other 'receivers', i.e. some college or university libraries will, because of their convenient location and/or strength of collections, receive more use by students of another institution than the corresponding use of the other institution by their own students. Until now, this imbalance, even amongst C.A.E. libraries, might have proven fatal to the introduction of cooperative borrowing facilities. However, as we point out in Chapter 3, there has been a considerable levelling of the strength of collections in C.A.E.'s as a result of the unmatched Commonwealth grants. Even if all C.A.E. collections were of equal strenth, the convenience factor, which is significant, would still be present. However, we believe that present barriers between institutions can no longer be justified.

We should hope that inter-institutional borrowing privileges might be initiated without fees, at least on a trial basis, until the pattern of reciprocal use is established, but recent experience with such a scheme in Western Australia suggests that some kind of inter-institutional accounting mechanism may need to be explored, particularly if both university and C.A.E. libraries are to be involved.

We suggest that the Association of Librarians of Colleges of Advanced Education (ALCAE) and the Committee of Australian University Librarians Librarians (CAUL) should each consider the general principles involved in the introduction of inter-institutional library use by both staff and students. In practice, however, we should expect agreement to be arrived at on a state-by-state basis, since inter-state borrowing rights are likely to be utilised by only a very small percentage of users. We consider that college and university librarians in each capital city should meet to consider the possible introduction of reciprocal borrowing rights. If no overall agreement can be reached, C.A.E. librarians in each state should aim for agreement amongst themselves.

There are bound to be fears on the part of some libraries of being swamped by students from other institutions, and we suggest that in the first instance, rights may need to be confined to a subset of potential user groups, e.g. in a first trial year, inter-institutional rights might be extended only to, say, academic staff, and graduate or final year students, while teething problems are sorted out and the overall reaction gauged. (Actually, we consider that it might be better to experiment by allowing first year students such rights for trial purposes and encouraging them to utilise those rights. Their pattern of library use will not be conditioned by previous restrictions and would probably give a clearer indication of the long-term trend. But whether agreement on this could be reached is more doubtful.) We strongly recommend that any trial period be extended for a period of at least two years, as experience in Western Australia suggests that the immediate pattern of use developed when such a reciprocal scheme becomes operational may not continue once users gain more experience. Also a one year period may not be long enough for all practical difficulties to be solved, and the scheme to gain acceptance amongst library staffs.

We are certain that there will be difficulties in the introduction of a reciprocal borrowing scheme, but we are equally certain that the benefits for C.A.E. students and staff are worth the efforts involved. We consider the greatest danger to be the introduction of inter-institutional arrangement without a full analysis of the problems likely to arise, and we suggest a careful phasing in towards complete inter-availability of collections to members of Australian tertiary institutions.

Cooperative Acquisition

Although we have stated above that we regard cooperative acquisition arrangements between libraries to be of relatively little benefit to undergraduate students, because of time constraints and lack of convenient browsing access in obtaining documents held in other libraries, we do not dismiss it entirely. We consider that maximum cost benefits in cooperative acquisition may well be best achieved in C.A.E. libraries by concentrating on the area of general reference and bibliographical works.

These works are often very expensive, and yet are often utilised relatively little by college members other than the library staff. Yet, it is necessary that all C.A.E. libraries should have some level of access to major bibliographical tools, such as Australia's *National Union Catalogue of Monographs*, now being published in microform, the United States *National Union Catalog*, the British Museum's *General Catalogue of Printed Books*, the NICEM Indexes to audio-visual materials, *New Serials Titles*, *Government Reports Announcements and Index*, etc. Yet, few of the smaller or medium-sized C.A.E. libraries could afford to purchase any such works, nor have they the need to use each particular work often enough to be able to justify their purchase. In most cases, their general bibliographical needs will be met more than adequately by the less comprehensive, but much cheaper, works such as those we list in Appendix 10. There is also a large range of directory-type reference works whose individual cost may not be so high, but which may be required in any particular C.A.E. library perhaps only two or three times a year, for the simple looking-up of a small piece of information, and whose purchase costs remain high in terms of potential use.

At present, ad hoc arrangements exist in most States, which allow C.A.E. libraries some access to these works. Copies will undoubtedly be held in each State and major University library, and many of these libraries will be happy to accept telephone calls for the purposes of verifying details of a known item, factual reference enquiries or even the undertaking of small-scale literature searches. However, if C.A.E. libraries are to forgo their own purchases of expensive bibliograhical and reference works, they must still retain access to these works, quickly and easily, when it is needed.

In practice, we consider that a high level of access is likely to be achieved only when the person in the library receiving a request, involving use of these works, regards the request from the requesting library as a priority, i.e. it is given a priority higher than, or at least equal to, that which would be given to a similar request from a reader or library staff member requesting in person. It seems likely, given inevitable financial constraints, that a State, university, or large C.A.E. library will only provide this level of priority service to other libraries, if it receives some financial assistance in so doing, and most likely, if the salary of the staff member(s) providing the service is paid for by the libraries who utilise it.

There are precedents for this kind of arrangement - for example, a member of the James Cook University staff being stationed for some years at the University of Queensland.[17] We envisage that C.A.E. libraries in each State might sponsor, on a cooperative basis, the establishment of a position, located, according to local circumstances, either in the State library, a major University library or possibly the major C.A.E. library, whose main purpose is to provide a verification service, for acquisition or inter-library loan, and a general literature searching facility, for requests from C.A.E. libraries. This service would aim at high priority and a turnaround time not significantly longer than that which would operate at the requester's own library.

An extension of this proposal would be for various C.A.E. libraries to negotiate a priority access, again for verification and literature-searching purposes, to expensive subject bibliographical works, such as '*Chemical Abstracts*', '*Biological Abstracts*', '*Social Science Citation Index*', etc. We emphasize that any C.A.E. which has a significant number of students and staff engaged in a subject area in which any such major bibliography is the main searching source, should have its own subscription. Nevertheless, there will be many cases where expensive serial bibliographies, abstracting and indexing services are of more marginal necessity. In these cases, we consider it worthwhile for a C.A.E. to negotiate access to another C.A.E. library which is able to justify holding the work, or combine this access through the same arrangement as with general bibliographies described above.

The actual means of access from one institution to another may vary depending on the geographical dispersion of C.A.E.'s within a State. Use of a daily courier, telex, or the telephone may be appropriate in different circumstances. In spite of the relatively high rental costs of a telex machine, described by Horacek in his investigation of V.I.C. Library cooperation,[18] we consider that many medium-sized C.A.E. libraries may find its use economic, if both normal inter-library loan requests and the reference access we have described were chanelled through the system.

Until some form of negotiated high-level access to bibliographical resources is achieved for all C.A.E. libraries, there is likely to remain pressure from teaching and library staffs in individual colleges for their own library to subscribe to some expensive works which receive a low use in relation to their cost. We do not consider that excessive duplication of expensive bibliographical and references is either necessary or economic, and we would urge C.A.E. librarians in each State to cooperate in this area, both amongst themselves, and with university and State libraries.

In the longer term, we expect that a substantial number of the expensive bibliographical works will be held in a computer stored equivalent form, and will be most economically accessed via a computer terminal placed in each C.A.E. library. However, we do not expect this to be a reasonable economic solution for colleges, even the larger ones, in the medium-term, and our comments above are outlined after giving due consideration to the likely development of on-line access to computerised data bases, as envisaged by the National Library of Australia and other organisations.

Campus Geography and Availability

Our literature review suggested, on page 71 of Volume 2, that the effective availability of documents was decreased, if a college's library collection was scattered in several physical locations, i.e. if a college contained more than one library (and there are many justifiable reasons why this should be the case), then a necessary corollary was that the size of collection required to provide a given level of availability to the user must be larger than if the collection was centralised at one location. The results of our own Document Delivery Tests described in Chapter 4 give a clear indication, in Tables 19 and 21, of the effects of the existence of branch libraries on collection availability.

Clearly, those C.A.E.'s which have more than one campus, and hence, more than one library, need a greater provision of resources than single-campus colleges. It is our view that branch campuses which are so far from the main campus that students and staff have no practical personal access to the main library, and to which a daily courier service from the main library is impossible, must be treated for the purpose of library collection provision as though they served a separate institution. This they certainly are from the viewpoint of their users - if the branch campus library does not contain a document required by a reader - then the time taken for the branch library to obtain the document is likely to be exactly the same, through the inter-library loan service, whether a request is channelled to the main campus library, or to the library of some other institution.

However, even when some degree of personal access is available to, and a courier delivery service exists between, various campuses of a college, as is the case in many metropolitan colleges, or where there has been an amalgamation or rebuilding of colleges in country towns, such as Ballarat, Bendigo, Gippsland, Gordon, Riverina, etc. there will still be some extra requirement for resources to provide the measure of duplication necessary no matter how 'logically' courses are split between the various campuses. We must assume that college administrations will pursue the rational policy of offering each course programme on a single college campus in these cases, except temporarily, while courses are in process of transfer from one site to another, as was the case when our Document Delivery Tests were performed at the South Australian Institute of Technology.

We are making allowance, therefore, only for the permanent situation where a college operates different courses on different sites, although we must emphasize the high rate of duplication of library materials necessary if a college does decide to operate any course on more than one site. Our results in Chapter 4 (see pages 86 to 88) suggest that the extra allowance needed for any course principally served by a library other than the main college library is of the order of 1-3%, if accessibility is to be equalised between single and multi-campus institutions.

However, to these course allowances must be added some provision for some necessary duplication of general reference works, and non-course-related materials. We have no empirical data to guide us in this area, but it is our view that duplication for these types of material must be at a higher rate than for course-related materials, where the extra allowance merely covers materials of 'fringe' interest to the course offered on the branch campus. Some general encyclopaedias, dictionaries, directories, newspapers, etc. will need duplication at each branch campus, and we cannot believe that even a bare minimum of provision can be achieved without at least duplicating 10% of the general collection normally provided.

It appears to be the policy of the Commission to encourage colleges to amalgamate all their courses on a single campus wherever possible. Undoubtedly, there are many economic reasons for this encouragement. The greater overall cost of provision needed for library collections, where a college operates on more than one campus, which we have described above, must be seen as part of this general problem. However, it seems likely that a number of C.A.E.'s will have to provide library collections on more than one campus for many years, or even indefinitely, and we must stress that the extra cost of provision must be allowed for, if those colleges are not to be disadvantaged for library resources.

Availability and Teaching Staff Involvement

As we indicated on page 215, even if the availability of material owned by a library is raised to its maximum, via the measures we have described, there will still remain a substantial number of documents sought by readers which the C.A.E. library will be unable to supply from its own collection, because the documents have never been acquired by the library.

We are aware that it is impossible for any library to have acquired, in advance, all the documents that their clientele will later seek - neither library nor teaching staff are able to read the future accurately! Nor, indeed, would it be desirable for a C.A.E. library to be able to meet every request when it is made - for the library to be able to do this, as we and other authors have reiterated many times, would imply that the library had to acquire a collection of massive size, most of which would receive little use. We consider that if the quantitative recommendations that we have made earlier in this report are followed, all C.A.E. libraries would have available a sufficient volume of material to meet a satisfactory proportion of all demands likely to be made on them, and at the same time have collections whose use rate more than justifies their provision.

It is also true, as many tertiary librarians experienced in reference work will testify, that an original request from a student, for a particular document, or material on a subject, can often be met by several acceptable alternatives within the library's own resources, to which students and staff may be guided.

It is for these reasons that we consider that there should be some onus on teaching staff to teach to the collection, when recommending materials to students and in preparing their courses. We are not suggesting that teaching staff should be completely constrained in devising course emphases, and drawing up lists of references, by their library's existing collection, particularly in colleges where collections are relatively poor. However, we do suggest that much more can be done by cooperation of teaching staff with library staff in attempting to ensure that recommended documents, and items relevant to course topics, are in fact available in the library when they are required by students.

A recurring theme in conversations with librarians in colleges and universities was the tendency of some teaching staff to set work to students which involved the use of materials not held by the library, nor even in the area in which the college or university was situated.

In practice, we consider the solutions to this problem lie largely in increasing communication between library and teaching staff regarding materials likely to be required by students. A number of librarians in colleges appear to place blame on teaching staff for lack of information about course requirements. While we accept that this may often be justified, we also hold the view that library staff are, in many cases, not active enough in making sure that teaching staff are aware of the difficulties that may be encountered in trying to meet students' library demands. It is essential that library staff be active in eliciting information from teaching staff sufficiently in advance for appropriate action to be taken, and this requires their involvement in, and knowledge of, course developments in colleges, from an early stage.

We consider that C.A.E. library staffs should have a representative on the appropriate Departmental or School Board at which new course proposals and changes are discussed, and similarly that each Department or School should have member of teaching staff acting as a library liason officer, with whom the library representative is able to maintain close personal contact relating to new developments. One of the problems that appears to have struck C.A.E. libraries, during the rapid expansion of courses in recent years, has been that final decisions relating to new course developments have been made so close to the start of teaching of those courses that the library has been unable to collect and process relevant materials prior to the demands of students and staff. This may be less of a difficulty during the slower rate of growth envisaged for C.A.E.'s in the future, but we would urge all C.A.E. administrations to keep the library informed of new course proposals from the earliest possible stage, and also to ensure that the considerable library costs that may be involved in new course developments have been taken fully into account.

At an individual course unit level, it will be the task of the library's staff to contact course organisers, prior to the start of teaching, about specific works that may be in high demand, to indicate any lack of relevant material, and suggest possible alternatives. Many teaching staff are simply unaware of some of the difficulties of library supply in Australian tertiary institutions, which utilise such a high proportion of materials published overseas. Once staff are aware, many of the availability problems faced by students can often be overcome.

Conclusions

We have reviewed the problems of collection availability in some detail, as we believe that C.A.E. librarians and administrations have not given enough attention to maintaining and encouraging use of materials that have been acquired at a considerable capital cost.

In making the recommendations below, we are aware that implementation will require an increase in the number of library staff in some of the more poorly-staffed C.A.E. libraries, and that such recommendations are likely to receive close scrutiny in the current economic situation in tertiary education. However, we make no apology for them. We consider that there is no point in pouring money into the improvement of library collections, for those collections to be under-utilised because of lack of library staff. Library collections in C.A.E.'s are a capital investment in the learning process for which the colleges have been established, and good library collections require a sufficient number of educated library staff to promote and operate them effectively, if the investment is to produce the dividends expected of it.

RECOMMENDATION 16. That all colleges consider whether the demands being made on their library collections are at a level one would expect to be associated with teaching and learning at a tertiary level, and that in any C.A.E. where per capita borrowing from the library's general monograph collections is less than 20 items per E.F.T. tertiary student per year, the college administration should conduct an examination of the reasons for the low level of usage, which may lie in teaching methods being employed, difficulties in library service, and inadequate library collections.

RECOMMENDATION 17. That each C.A.E. library conduct a 'failure survey', following the basic techniques developed by the University of Cambridge Library Management Research Unit*, designed to provide information on the main reasons why documents sought by readers are not available when required.

RECOMMENDATION 18. That, on the basis of the information provided in this report, and the results obtained from the failure survey recommended in Recommendation 17, all C.A.E. Chief Librarians re-examine their loan policies, reshelving procedures, library guidance and location systems, security procedures, and binding policies, with a view to maximising the practical availability of material owned by the library.

**Note:* The failure survey technique is described in articles by Urquhart and Schofield[19,20], and a test package is available from the Library Management Research Unit at the University of Cambridge.

RECOMMENDATION 19. That distinctions relating to library borrowing rights based entirely on the status of particular members of the college be abolished, and replaced as far as possible by variable loan periods based on the demand for particular works, and that in devising such a system, special attention be given to the needs of external students and, to a lesser extent, part-time students, in C.A.E.'s where these students are served.

RECOMMENDATION 20. That inter-library loan services be available to all members of a college, and that inter-library loan be facilitated in each metropolitan area by the cooperative provision of a courier delivery service between C.A.E. libraries, and if possible, including university libraries, the State library, and other relevant libraries.

RECOMMENDATION 21. That the feasibility of setting up a system of inter-institutional personal borrowing rights should be discussed by the Association of Librarians of Colleges of Advanced Education and the Committee of Australian University Librarians, and that C.A.E. and university librarians in each State meet to plan the phased introduction of borrowing rights, with the eventual aim of enabling all members of any one institution to have access to the libraries of other tertiary institutions.

RECOMMENDATION 22. That any C.A.E. library introducing a computer-based circulation system give full consideration to the need to design into the system a means of automatic feedback of data relating to borrowing patterns, to be used for library management purposes in the area of selection, acquisition, discarding, and stock control.

RECOMMENDATION 23. That C.A.E. Chief Librarians in each State meet to discuss the desirability and feasibility of establishing a cooperative bindery arrangement, possibly in collaboration with one or more university libraries, designed to ensure a faster processing of serials in demand.

RECOMMENDATION 24. That each C.A.E. library re-examine its binding policies and priorities for serials, and investigate the economics and desirability of using some form of less permanent binding process, carried out within the library, for the binding of many serial volumes.

RECOMMENDATION 25. That C.A.E. Chief Librarians in each State consider a cooperative acquisition arrangement for the provision of expensive bibliographical and reference works, and consider the most desirable way in which each library can maintain rapid and priority access to any of these works held in another College of Advanced Education or other library.

RECOMMENDATION 26. That, for the purposes of collection provision as stated in Recommendations 3, 5, 6 and 12, the library of any branch campus of a College of Advanced Education, situated so far from the main campus that it is not practicable for members of the branch campus to have personal access to, or a daily courier delivery from, the central campus library or adequate alternative library resources, be treated as if it were the library of a independent institution. Libraries falling into this category, as at 1st October 1976, include:-

South Australian Institute of Technology
- Whyalla Campus

Tasmanian College of Advanced Education
- Newnham Campus

Western Australian Institute of Technology
- Kalgoorlie Campus
- Muresk Campus

RECOMMENDATION 27. That for each College of Advanced Education which offers courses on more than one campus, for each campus that operates a branch library, an addition of 10% be made to the general collection provision, and an addition of 2½% be made to the 'per course' provisions for each course area served primarily by a branch library, to the levels resulting from the application of Recommendations 3, 5, 6 and 12. This recommendation excludes the campuses listed in Recommendation 26, which requires the special provision recommended.

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CHAPTER 11

COLLECTION QUALITY AND SELECTION

Introduction

The quality of a library's collection is, as we discuss in detail on pages 13 to 23 of Volume 2, difficult to determine in any way other than subjectively. Our reading of the extensive literature led us to the conclusion that, in the C.A.E. context at least, the quality of the library's collection has a close link with the effectiveness with which it meets the needs of the members of the institution which the library serves, at present and in the relatively near future, i.e. that the subjective value-judgement of 'collection quality', and the objective measure of 'collection usage' are correlated, though not necessarily completely. If we define a 'quality collection' as one that best fulfils the needs of the clientele it is to serve, then in the C.A.E. context, each item selected, whether as a result of purchase or gift, should be used or have a reasonable expectation of being used within a relatively short period after acquisition.

However defined, overall collection quality will be determined at the point of selection. Some mistakes in selection are inevitable, by the very nature of a process whereby tens of thousands of individual selection decisions may need to be made within a single college each year. But it is incumbent on each college library to develop selection procedures which minimise the level of acquisition of items which will never be used, and whose purchase and processing costs simply represent 'money down the drain'. In making this statement, however, an implicit assumption is that the library and teaching staff in combination are encouraging an appropriate level of demand on the library, by attention to some of the considerations we have described in Chapter 10.

Quality Control

Visits to a wide range of C.A.E. libraries lead us to believe that many libraries are not operating a programme of sufficient quality control at the point of selection. Lack of quality control is occurring at two levels - in relation to general areas of collection development, and in the process of selection of individual items. Very few libraries have a clearly defined policy on collection development in relation to the course and other requirements of the college. Correspondingly, the selection of individual items is often the responsibility of individual academic staff members, with little coordination or monitoring by library staff, or any other academic staff. This does not mean that we regard the selection of library materials as wholely a responsibility for library staff. Indeed, the whole literature relating to selection procedures suggests that relevant collections are best built up in tertiary libraries as a result of close co-operation between library and teaching staff.

But in many C.A.E. libraries it would appear that library staff have virtually no role in selection, and act simply as an acquisition operation. We consider that where this situation exists, the development of the library's collection is likely to be unbalanced, containing material of interest only to individual members of teaching staff - at the expense of areas of more general interest. This situation can occur even if the library materials budget is divided up amongst teaching departments, unless each department is prepared to closely monitor its aggregate recommendations. Indeed the situation may be at its worst in such a case, since each department often overlooks material of 'fringe' interest to its needs, thus leaving gaps which cannot be filled by library staff, because they have insufficient funds under their direct control.

Quality and Library Staffing Levels

We consider that many of the selection problems in C.A.E.'s are caused by a shortage of library staff who are able to coordinate materials selection. In visits to Australian and

British university libraries during the course of this project, it was evident that in most of the libraries visited, library staff played a considerably greater role in selection of material than was common in C.A.E. libraries. A comparison of library staff numbers in some Australian universities and Colleges of Advanced Education, serving similar numbers of students, is shown in Table 42. The number of library staff required to be able to offer a given range of services is determined largely by the rate of input of new materials to the library, and the use made of the library. As we indicated in Chapter 3, per capita circulation from C.A.E. libraries is rapidly approaching that from the university libraries, while the disparities in annual levels of acquisition are not nearly as large as they were a few years ago. Thus, while we would consider that university libraries may still require rather more library staff than C.A.E. libraries serving the same number of people, particularly in the technical processing area, the substantial differences evident in Table 42 can only mean that most C.A.E. libraries are not able to undertake some of the services common in Australian university libraries.

This is particularly exemplified by considering the column relating to the ratios of Reader Services staff to E.F.T. population served by the libraries of each institution. (We have grouped the institutions on the basis of similar populations served, since the statistics and the published literature suggest that there are some economies of scale in library staff provision, and that it is not valid to make comparisons between institutions very different in size.) The ratios show quite clearly the disadvantageous staffing position of almost all C.A.E. libraries, as compared with those of the universities. Only in one case does a C.A.E. library have a Reader Services Staff: Population Served ratio equal to that of a university, and even then the equality is with the university with the lowest proportion of reader services staff, of all those listed.

Since it is reader services staff who would be mainly engaged in the liason activities with teaching staff that are necessary for improving the quality and availability of library collections, we consider that most C.A.E. libraries must be

TABLE 42

SOME COMPARISONS OF LIBRARY STAFFING IN COLLEGES OF ADVANCED EDUCATION AND UNIVERSITIES, 1975

Name of Institution	Tertiary Students and Teaching Staff (E.F.T.)	Total Number of Library Staff	Ratio of Library Staff to E.F.T. Population	Number of Reader Services Staff	Ratio of Reader Services Staff to E.F.T. Population
University of Western Australia	8,861	138.5	1:64	65	1:136
University of Adelaide	8,745	147	1:60	58.5	1:149
Royal Melbourne I.T.	8,115	87	1:93	34	1:239
Western Australian I.T.	7,486	123	1:61	47.5	1:158
Macquarie University	7,297	117.75	1:62	57	1:128
La Trobe University	6,960	111	1:63	44	1:158
Melbourne State College	4,127	63	1:66	28	1:147
New South Wales I.T.	3,927	40	1:98	13	1:302
University of Newcastle	3,819	68	1:56	29	1:132
Caulfield I.T.	3,316	44	1:75	22	1:151
Canberra C.A.E.	3,308	57	1:58	22	1:150
Flinders University	3,295	73	1:45	29	1:114
University of Tasmania	3,154	77.5	1:41	35	1:90
Mitchell C.A.E.	2,028	24.5	1:83	9.5	1:213
Riverina C.A.E.	1,863	26	1:72	11	1:169
Darling Downs I.A.E.	1,795	31	1:58	9.5	1:189
University of Wollongong	1,764	43	1:41	14	1:126
James Cook University	1,763	40.5	1:44	21	1:84
Footscray I.T.	1,735	21.9	1:79	10.4	1:167
Mt. Gravatt C.A.E.	1,602	24	1:67	9	1:178

Sources: *Library Statistics 1975. Supplement to Australian Academic and Research Libraries, 7 (3), September 1976.*
Commission on Advanced Education. Recommendations for 1976.

experiencing a severe shortage of staff able to assist in improving collection quality. However, the relative improvement in C.A.E./University library comparisons, which is seen when total library staff ratios are compared, does suggest that some C.A.E.'s may be concentrating too many staff in their technical services operations, and might be able to make greater efforts in the general area of reader services, even within their current staff resources. Our visits to various colleges suggest that this may sometimes be the case, but nevertheless the more significant problem is the overall staff shortage constraining C.A.E. libraries.

We would add also that few Australian university libraries would regard themselves as entirely adequately staffed, and we are not recommending current university staffing levels as necessarily ideal for C.A.E.'s. We are merely stressing that many C.A.E. libraries are at present unable to offer some of the services taken for granted in university libraries. We consider that collection development is one of these services and has been one of the areas of neglect in C.A.E.'s. It may well be that a substantial proportion of the Commonwealth unmatched grants provided for collection development during recent triennia has not been used to the greatest advantage of students in the colleges, because of this neglect.

Collection Development

We consider that all C.A.E. libraries should have at least one professional librarian whose major responsibility is in the area of collection development. (In all but the smallest libraries we should expect a larger number of staff to be involved, each responsible for particular subject areas of the collection.) Collection development duties would include:-

(a) Liaison with teaching staff in relation to course developments and selection needs.

(b) Undertaking a continuous programme of stock editing of the collection, so that each subject area is reviewed in turn, for necessary additions and discarding, with the aid of bibliographies, literature guides, and teaching staff assistance where possible.

(c) Selection of materials not specifically recommended by teaching staff, to round out course areas, and to ensure adequate coverage of fringe areas, general non-course relating reading, and bibliographical and reference aids.

(d) Monitoring the flow of requests from teaching staff to ensure a reasonable balance of acquisition right across the range of college interests.

(e) Promotion of teaching staff interest in library acquisition, by bringing new publications to their attention.

In general we should expect a higher quality of material selected, where library staff are more involved in the workings of the institution they serve. The same arguments that we made on pages 232 to 234, in relation to improving availability of particular titles, apply equally to the improvement of collection quality in libraries, and we reiterate that we consider it to be highly desirable that library staff be represented on the various School or Department boards of colleges, not only to provide feedback to teaching staff on library matters, but so that the library may be aware of new course developments at an early stage, and to encourage personal contact with teaching staff to build up knowledge of the particular library requirements of individuals and departments.

Knowledge of the needs of the institution and current and likely future developments in the college can only be reflected in a more relevant selection of materials. This knowledge may then be utilised in an integrated and balanced development of the collection. As what appears to be inevitable pressures towards the development of more postgraduate and research programmes exert influence on colleges and their libraries, we consider that it is essential that each C.A.E. library should have a collection development policy, which clearly defines any subject areas in which the library is to develop its collection beyond the basic undergraduate and graduate diploma level. Experience in many universities suggests that the development of research-level collections in libraries has often been at the expense of adequately meeting the needs of undergraduate students, and we are concerned that some C.A.E.'s may be tempted to follow the same pattern. With the shortage of library staff available, in most colleges, who can effectively monitor collection development, we feel it to be necessary for Chief Librarians and teaching staff to be guided by a clear policy on the direction of that development, particularly in relation to the building up of serials collections.

There are areas, and there are likely to be more areas in the future, where colleges are able to justify the building up of research-level collections in some depth. A C.A.E. may be the sole centre in which tertiary education and/or research in a particular subject area is carried out within a State, or even within Australia as a whole. It is both logical and desirable that in such cases the library collection in the college should be developed beyond the undergraduate level, and even beyond the immediate needs of the college's own clientele, as part of a national network of library resources. Similarly, colleges serving a particular region might be expected to develop more comprehensive resources related to the region which the college serves.

However, we regard it as essential that there should be a conscious decision by the college and its library that the library is going to develop its collection in depth in a particular subject area, and that the area involved is specified precisely. We are concerned that some colleges may be introducing courses at the Master's degree level without any real consideration of the substantial library resources required for adequate study at this level, and that C.A.E. libraries may be therefore, expected to build up 'research-level' collections to serve these areas without adequate financial resources for the purpose.

A specified collection development policy will also help the library with decisions relating to the discarding of materials no longer of value to the library. Although, as we have stated previously, this is a relatively minor problem in colleges at present, because most C.A.E. libraries have acquired a high proportion of their collections in the last few years, it is a problem that will be become more significant each year, and will assume some immediate significance in those colleges nearing their maximum size and scope.

It will be essential for each library to develop an on-going programme of stock review, so that each area of the collection is reviewed at regular intervals, to weed out material no longer of use, and to fill areas of weakness which may have been given insufficient attention in the on-going process of selection. Again, ideally, such a programme of stock review is undertaken by the library's collection development staff working in close collaboration with teaching staff, but experience in tertiary libraries suggests that the task often falls almost entirely on the library staff.

For college libraries whose primary purpose is to meet needs for teaching and learning at the undergraduate level, we regard a stock review programme as being of considerable importance, in helping the library to maintain a relevant, useful collection, which meets the main needs of most of its users, and not permitting the building up of a massive collection, almost by default, much of which is of relatively little use to undergraduates - the problem which has forced the formation of separate undergraduate libraries in many larger universities.

Each collection development policy should, therefore, include guidelines for the discarding of items on a regular on-going basis, carried out each year during the periods of the academic year when library use is relatively low. These guidelines should include practical instructions, so that as much as possible of the process of discarding may be carried out without requiring high-level decision making. We suggest that all C.A.E. librarians read Seymour's work[1,2] before drawing up any guidelines.

Responsibility for Collection Development

We regard it as the responsibility of C.A.E. Chief Librarians to emphasize this problem to their administrations, and to draw up written collection development policies defining any special areas of development in depth. There are a number of ways in which such a collection development policy may be specified in detail, but we recommend that followed by the James Cook University which we describe in our literature review on pages 20 to 21 of Volume 2. Where such a policy exists, it should be clear to all in the college, that the library, and the college, has accepted and will meet the financial commitment involved in collecting materials to meet certain postgraduate and research needs. Arguments over the allocation of library resources may then be settled within a clear framework of what the college and its library is trying to achieve. All new course proposals at post-graduate level should then be accompanied by a statement from the Chief Librarian of the necessary concomittant library collection costs.

It is our considered view that it is the overall responsibility of the Chief Librarian in each college to develop and execute the collection development policy. He or she should draw heavily on the advice of teaching staff and other library staff but the overall responsibility for balanced development remains that of the Chief Librarian, acting so as to ensure a monitoring of overall collection development. Monitoring of purchase requests from teaching staff would be aided by the use of request forms which require staff to indicate the specific level and purpose envisaged for each recommended item, but this is likely to be ineffective without sufficient knowledgable library staff, specialising in collection development. With such staff available and, in larger colleges, each having some special responsibility for particular course areas, a collection of maximum overall benefit to all college members is more likely to result.

As we stated in Chapter 10, we should also expect library staff concerned with selection to utilise inter-library loan requests, reservations and circulation records as an aid to selection of new monograph titles, extra copies of titles in heavy demand, purchase of current and back numbers of serial titles and the later discarding of little-used material. We are aware that this use of circulation records is difficult or impossible for many libraries with manual loan systems.

However, we reiterate that any library that has installed, or will install, an automated circulation system, should not overlook the potential of these systems, in providing management data which may be used to aid selection.

Although, the overall responsibility for collection development remains that of the Chief Librarian, we regard it as particularly important that there should be maximum participation by teaching staff in the selection process. Teaching staff inevitably will have expertise in the subject matter of the courses in which they are involved, and it should be the object of the library to utilise this expertise to the maximum extent in developing a collection of quality. We consider that this is likely to be achieved only where the library plays an active role, in bringing to the notice of teaching staff details of newly published material, so that their subject expertise may be brought to bear on selection decisions.

We are aware that in practice, teaching staff involvement may be somewhat haphazard, with some staff unwilling or with insufficient time available to assist in the collection building process - this is a major reason why library staff are required to monitor overall development. But in some colleges, we consider that librarians may not be active enough in obtaining and circulating publisher's advance notices, bookseller's catalogues, bibliographies, review sources, etc. to teaching staff who are responsive. In some colleges, it will be possible for the library to obtain books on approval, by arrangement with booksellers, for teaching staff to peruse for selection. Library staff can send off automatically for sample issues of new serials which come to their attention, and direct them to the most appropriate members of teaching staff, for consideration of a subscription.

As we noted in Chapter 7, the pattern of buying of non-book materials in many colleges, and the lack of review coverage of non-book materials in many of the normal journal sources utilised by teaching staff, suggest that at present, library staff in colleges need to take a more active role in promoting teaching staff involvement in non-book materials selection than for print materials, and also in initiating themselves a greater proportion of the selection of non-book materials.

Guides to Selection

If more decisions relating to selection are to be made within the library, then every C.A.E. must have an adequate supply of major bibliographic tools as an aid to selection, both unannotated listings and general review sources. For most courses at undergraduate level, it is not essential that new monographs be bought immediately on publication - the analysis of publication dates which we described in Chapter 5 indicates that there is not the immediate use of new publications that one associates with many research requirements. The use of good review sources is more relevant for C.A.E. libraries than for research libraries, and we should expect college libraries to have available a range of general review publications. We do not wish to lay down any prescribed list of bibliographic tools, but we should expect most libraries to hold and use those listed in Appendix 10.

The listing we have made in Appendix 10 illustrates one of the problems of selection faced by C.A.E. libraries, particularly those in smaller colleges - the lack of published bibliographical aids which are suitable for selection for Australian colleges. For material published overseas, which, as we have suggested on page 207, forms a high proportion of C.A.E. library acquisitions, helpful use may be made of review publications such as *'Choice'*, *'British Book News'*, and *'Reference Services Review'*. But for Australian material, which is particularly important for course programmes other than those in applied science and technology, very little published guidance is available to the C.A.E. librarian. The recent publication by Borchardt and Horacek[3] provides some assistance in the field of Australian bibliography, but there is no general guide to Australian reference works, although compilation of such a work is in progress. More importantly, there is no on-going current guide to new Australian publications in which a wide range of tertiary-level publications are reviewed adequately and concisely.

This is a major drawback, as most C.A.E. libraries, other than those which serve monovocational colleges, are unable to employ professional library staff with a sufficient range of basic subject expertise to match the college's range of course programmes, and this severely limits the extent to which library staffs are able to participate in collection development, quite apart from the problem of shortage of staff we have referred to above. We consider, that with nearly 100 tertiary educational institutions now existing, quite apart the many institutions concerned with technical and further education, it may be feasible to consider the establishment of a general review publication, directed at the needs of libraries of educational institutions, and carrying short reviews of Australian publications and materials of Australian interest, hopefully covering monographs, serials and non-book materials.

We consider that there is a strong underlying need for such a publication in Australia, although the economics of its production must be regarded as uncertain, and any publication might require subsidy. We have been unable in our own work to provide much help to C.A.E. librarians in relation to selection of titles, but as a by-product of our study of serials usage, we list in Appendix 11 the most strongly recommended periodical titles in various course areas, and some libraries may find this of possible assistance.

Conclusions

As with our recommendations at the end of Chapter 10, many of those that follow our considerations of collection quality also imply provision of sufficient well-educated library staff to ensure that collections are of the highest quality. Once again, we make no apology for this. It is our view, from observations in many C.A.E. libraries, that a substantial part of the unmatched Commonwealth grants to C.A.E. libraries for collection building, made available from 1970 to 1975, has not been used to the best advantage, because of the lack of staff available in most college libraries, able to monitor the spending of the greatly increased funds for acquisition purposes. Although the grants concerned have substantially improved the quantity of material available to students and staff, the quality of material acquired, in relation to the needs of colleges, has not always increased to the same extent. Table 43 indicates and reiterates the conclusion that colleges generally are not allocating sufficient recurrent resources to staffing their libraries. (It is of dubious validity to compare institutions of completely different scope, so the comparison in Table 43 lists only multidisciplinary C.A.E.'s and universities for which statistics were available.)

TABLE 43

LIBRARY STAFF COSTS AS PROPORTION OF TOTAL RECURRENT BUDGET IN UNIVERSITIES AND COLLEGES OF ADVANCED EDUCATION, 1975

UNIVERSITIES			COLLEGES OF ADVANCED EDUCATION		
Griffith	(469)	9.48%	Tasmanian C.A.E.	(2,348)	5.72%
Murdoch	(621)	8.55%	Riverina C.A.E.	(1,863)	5.21%
Wollongong	(1,764)	6.30%	Canberra C.A.E.	(3.308)	4.46%
La Trobe	(6,960)	5.69%	Darling Downs I.A.E.	(1,795)	4.40%
Flinders	(3,295)	5.02%	Torrens C.A.E.	(2,445)	4.37%
Tasmania	(3,154)	5.01%	Caulfield I.T.	(3,316)	3.93%
James Cook	(1,764)	4.48%	Western Australian I.T.	(7,486)	3.91%
Newcastle	(3,819)	4.46%	Ballarat I.A.E.	(997)	3.84%
Monash	(12,459)	4.23%	Swinburne C.T.	(3,639)	3.70%
Adelaide	(8,745)	4.01%	Warrnambool I.A.E.	(558)	3.67%
Western Australia	(8,861)	3.80%	Prahran C.A.E.	(1,066)	3.65%
New England	(5,598)	3.63%	Bendigo I.T.	(1,090)	3.54%
Queensland	(14,791)	3.56%	Capricornia I.A.E.	(1,112)	3.44%
Australian National	(6,121)	3.00%	South Australian I.T.	(3,557)	3.28%
Macquarie	(7,296)	2.94%	Mitchell C.A.E.	(2,028)	3.21%
New South Wales	(16,593)	2.85%	Gippsland I.A.E.	(980)	3.16%
			New South Wales I.T.	(3,927)	2.65%
			Royal Melbourne I.T.	(8,115)	2.46%
			Queensland I.T.	(3,416)	2.42%
			Footscray I.T.	(1,735)	2.09%
			Gordon I.T.	(1,344)	2.08%

Source: *Library Statistics 1975. Supplement to Australian Academic and Research Libraries, 7 (3), September 1976.*

Note: Figures in parentheses represent the E.F.T. totals of teaching staff

When we consider that there are likely to be economies of scale in library staffing, a suggestion which is given confirmation both in Tables 42 and 43, there appears to us little doubt, in combination with our observations in college libraries, that many colleges at present are not providing their libraries with sufficient staff resources to ensure that they are able to develop, promote, and make available a collection of adequate quality and scope. We consider it unlikely that any college with less than 5,000 E.F.T. tertiary students has even a barely satisfactory library staffing situation, if library staff costs form less than 4% of the recurrent budget.

It may be that our considerations of staffing levels, and the recommendations that follow, are outside the scope of this report, but we believe that the quality of C.A.E. library collections is in practice crucially dependent on these factors. In many colleges, the recommended features will already be operational - our purpose is to try to ensure that all colleges discuss the proposals in detail.

RECOMMENDATION 28. That all C.A.E. libraries include professional library staff whose main role is in the balanced development of the library's collection, in cooperation with teaching staff, participating in selection of current materials, a coordinated programme of stock review, and promotion of teaching staff interest and participation in collection development.

RECOMMENDATION 29. That each C.A.E. Chief Librarian, in collaboration with representatives of teaching departments, develop a written collection development policy, updated as necessary each year, with the primary, but not sole, purpose of delineating in detail any areas of collection development to serve needs beyond those of undergraduate teaching and learning.

RECOMMENDATION 30. That a member of the professional library staff of each College of Advanced Education represent the library on the appropriate Board/Committee of each School or Department which is concerned with new course developments, with the aim of increasing the communication necessary to improve both the quality and availability of the library's collection, in serving course programmes.

RECOMMENDATION 31. That each School/Department in a College of Advanced Education have a member of its teaching staff designated as its library liason officer, to present the School/Department on library matters, and act as an informal channel of communication with appropriate library staff.

RECOMMENDATION 32. That all new course programme proposals in a College of Advanced Education be accompanied by a statement from the Chief Librarian outlining the extra capital (retrospective) and recurrent library collection costs associated with the development, and that such a statement be a mandatory inclusion in any college submission to the Commission on Advanced Education for funding of Post-graduate Diploma and Master's level programmes.

RECOMMENDATION 33. That full responsiblity for the development of the library's collection in a College of Advanced Education rest with the Chief Librarian, acting with advice from, but not the direction of, teaching staff in the College.

RECOMMENDATION 34. That the Commission of Advanced Education refer for discussion to the Australian Advisory Council on Bibliographical Resources, the desirability and feasibility of the establishment of a serial publication to review newly published Australian works, designed primarily, but not necessarily exclusively, to act as a selection aid for tertiary libraries, both in Australia and overseas.

RECOMMENDATION 35. That the Commission on Advanced Education recommend, as a guideline to the administrative bodies of all established Colleges of Advanced Education, that expenditure on library staff salaries and salary costs comprise at least 4% of a college's total annual recurrent budget.

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1. Seymour, C. A. Weeding the Collection: a Review of Research on Identifying Obsolete Stock. Part 1. Monographs. *Libri*, 22 (2), 1972. p. 137-148.
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CHAPTER 12

GENERAL CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER STUDY

Anyone who has read through this report will be aware of the constant qualifications we have had to add in making many of our recommendations. The aim of this project was to discover whether it was really possible to make overall recommendations of a quantitative and qualitative nature regarding library collections in Colleges of Advanced Education. In concluding that it is feasible to make such recommendations, we have not tried to minimise the difficulties involved, and we cannot claim that some of our conclusions are unchallengable, nor are they based always on entirely reliable empirical evidence.

Any recommendations of this nature must be based on the underlying needs of the clientele served by C.A.E. libraries. But in spite of a considerable amount of research in recent years, the problems of determining these underlying needs, and then relating them to the required provision of library materials, both in quantitative terms and in terms of individual title selection, remain largely unsolved. Even had this project had ten times the resources which were actually available, we should not have been confident that any of our recommendations would rest on any more convincing evidence than we are able to present here. We consider that some aspects of library provision are not capable of being translated accurately into quantitative terms, with our presently available knowledge and techniques.

Nevertheless, libraries must be provided with collections, and funding authorities and the institutions that libraries serve must have guidelines available to assist them in making rational decisions on library developments. This project had the aim of producing guidelines based on the real needs of colleges. While it would be invidious to claim that we have entirely succeeded, we do claim that our recommendations rest on a firmer base than previous recommendations produced in

Australia, and the great majority of recommendations formulated overseas. The empirical data of our studies are incomplete, but in the absence of previous detailed studies of C.A.E. library use, they represent a beginning, and we are reasonably confident that our quantitative recommendations are of the right order of magnitude, if the real needs of colleges are to be met.

We are aware that our quantitative recommendations, particularly those relating to the provision of monographs, project sizes of collection that are considerably larger than those held by many colleges at present, but if students and staff are to maintain a high level of educational achievement in colleges, then they must be provided with library facilities of an adequate standard. Although the application of our formulae may, in some cases, result in overall collection sizes that seem high in comparison with those of many present collections, a closer examination suggests:-

(a) The collections in some of the best existing C.A.E. libraries, e.g. the Tasmanian College of Advanced Education, already approach, or in some aspects exceed, our recommended standards (which are not ideals, but recommended minima).

(b) If funding for collection development was maintained at the level generally received by most college libraries in 1974 and 1975, most colleges would approach recommended levels very rapidly.

(c) Comparisons of provisions suggested by our formulae with the collection levels existing at the end of 1975, as stated in available statistics, suggest that our recommendations imply a relative shift in the application of collection funds towards a greater investment in monographs and a smaller investment in current serial titles. We have speculated in the main body of the report about some of the reasons for the present situation, and that, in some cases, it may be more apparent than real. Nevertheless, it is our considered view that many C.A.E. libraries are indeed tending to spend too great a proportion of their recurrent budgets on current serials, to the overall detriment of the clientele they serve. Preliminary results from an on-going study of periodical usage by staff of the Western Australian Institute of Technology library tend to confirm this view. A shift in the relative allocation of funds in many colleges would allow achievement of our recommended levels of monograph provision at an earlier date than would be possible if current allocations continue.

We also consider that if our recommendations in Chapter 10 are adopted, allowing greater personal inter-accessibility of collections in C.A.E. (and university) libraries, and faster inter-library access via delivery services, this will permit colleges to engage in much greater cooperation in the acquisition of serials. As long as inter-library loan services are restricted and slow, and as long as personal access to other libraries is denied, then teaching staff in colleges will continue to demand, and rightly, that their own libraries hold a wide range of serials, needed relatively seldom, but important when they are needed. With a greater degree of accessibility to serials held in other libraries, we see considerable scope for C.A.E. libraries to reduce the relative proportion of the acquisitions budget currently devoted to serials, and fill some of their significant monograph deficiencies.

We consider therefore that, even in the current economic situation, our recommendations are capable of achievement, given college administrations prepared to support library development. Unfortunately, it seems fairly clear to us that some college administrations do not regard library collections as a priority for development. A number of colleges, for example, seized on the Commonwealth unmatched grants of the 1973-75 triennium as an opportunity to cut back drastically the library collection funds provided from general college recurrent funds.* We have no hesitation in condemning this action, for whatever reasons it was taken, and we consider that the colleges involved will probably have inadequate libraries for many years to come, as a result of failing to fill some of the major retrospective gaps in their collections, during 1973 to 1975.

We consider that the present inadequacy of many college libraries results partially from past neglect, and more recently from the fact that colleges have developed the range of courses offered at a faster rate than their libraries have been able to expand collections to meet the growing needs of these new courses. We believe that both college administrations and the Commission on Advanced Education have largely underestimated the true library collection cost associated with the development of a new course programme, no matter how few students are involved.

The application of our recommendations confirms the findings of the recent A.N.U. Regional Colleges project[1] that the libraries of country colleges serving relatively small number of students in a wide range of courses are particularly inadequate. We are aware that social, political and other considerations may result in the establishment of new courses in smaller colleges, even where there is little prospect of any substantial demand for those courses, but the Commission should be aware that if approval for such courses is given, either the per capita library cost is going to be very high, or else the students in those colleges are going to receive a sub-standard education. Good libraries are expensive, and they are a service, provided to meet the educational needs of the institutions they serve. Overall library costs in Colleges of Advanced Education throughout Australia are likely to remain much higher than necessary, unless and until there is a greater rationalisation of course programmes in colleges.

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* *Note:* For evidence, see the statistics related to funds provided by each college for acquisition purposes, published in the '*Library Statistics*' supplements for 1972 to 1975 in '*Australian Academic and Research Libraries*'.

Particular problem areas that require further study are:-

(a) Non Book materials provision. We have discussed in detail the needs for further study relating to this problem, at the end of Chapter 7.

(b) External students' library needs and the best methods of servicing them. The evidence of the Regional Colleges project[2], and the Committee on Open University's report[3], together with the results of our own literature search, suggest that the provision of library services to external students, if carried out adequately, is both expensive and difficult, and that there is very little evidence available to help college librarians in making decisions on how to cope with the demands of external students. With the increasing proportion of external students in Colleges of Advanced Education, research into external student library services is needed urgently.

(c) Master's degree programmes, and their implications for the funding of library collections in colleges. With the increasing development of Master's degree programmes in the larger C.A.E.'s, a tendency which may well spread to the smaller colleges, there is some urgency in a study of the implication for libraries. Our own recommendations in this report are based on our empirical findings in relation to undergraduate programmes, and on recommendations from North America, where the library needs of postgraduate programmes have been studied in more detail. What is certain is that postgraduate programmes are expensive in library terms, and that the Commission needs further data available to guide it in decisions relating to Master's degree programmes.

RECOMMENDATION 36. That the Commission of Advanced Education finance a study to determine the extent and kind of use that is being made of non-book materials in C.A.E. libraries, based on those college libraries which have invested relatively heavily in the provision of non-book materials, and may be expected to have the widest experience in the use of such materials, and that the findings of the study be utilised to make quantitative recommendations regarding the desirable levels of provision of non-book materials in C.A.E. libraries.

RECOMMENDATION 37. That the Commission on Advanced Education, in conjunction with the Universities Commission, finance a study to determine the best means of providing external students with access to the library materials that they require for tertiary level studies.

RECOMMENDATION 38. That the Commission on Advanced Education finance a study to determine in more detail the necessary level of library collection provision associated with the development of Master's degree and Post-graduate Diploma courses.

REFERENCES

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